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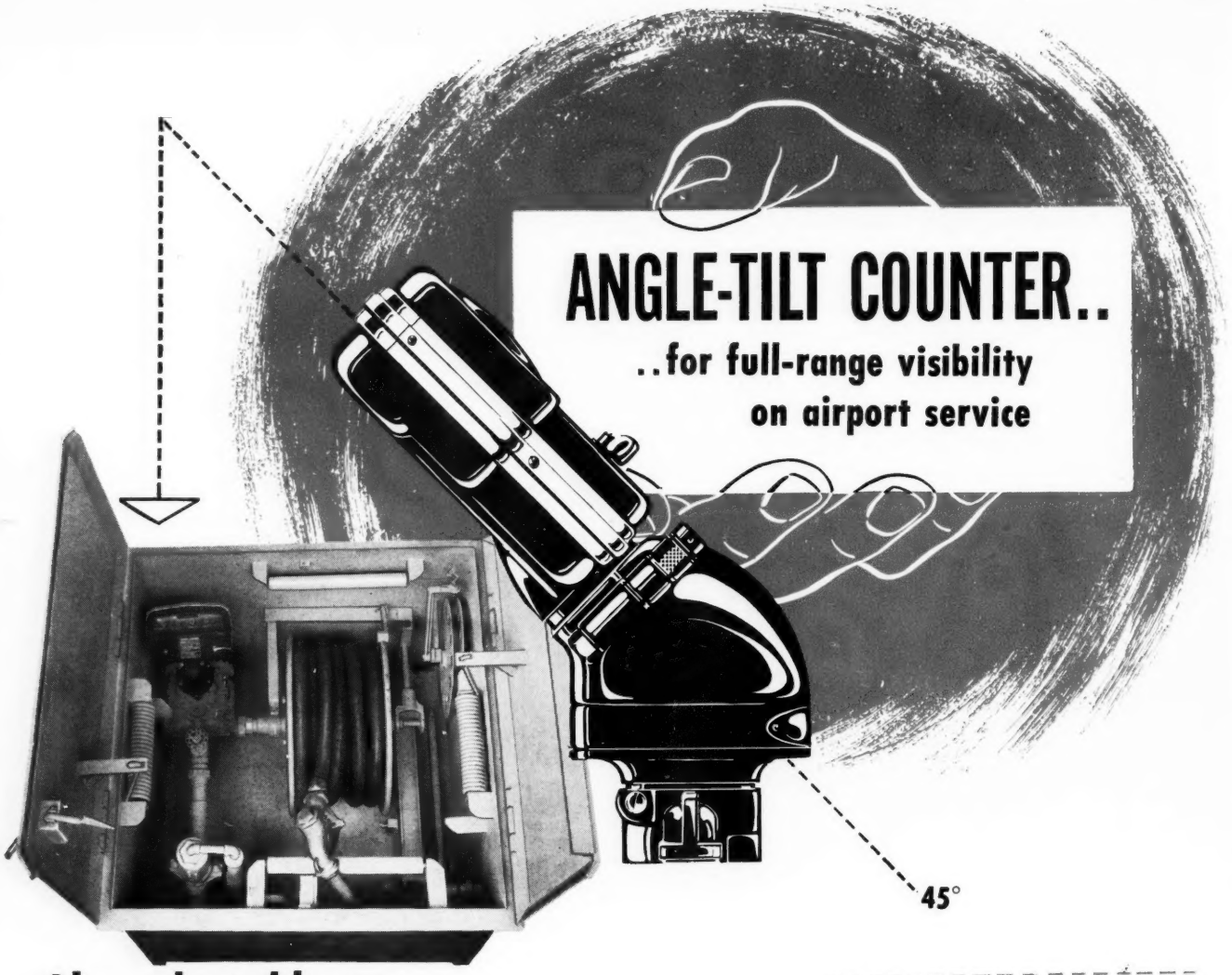

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VOL. 8, NO. 8

fueloil & oil heat

DECEMBER

1949

Names in the News

R. M. Sherman, president of Silent Glow Oil Burner Corp., Hartford, Conn., was honored at a dinner in the plant, November 14, in celebration of his 25th anniversary as head of the company. The entire available factory and field personnel attended the surprise party and presented Mr. Sherman with luggage as a memento of the occasion. At the head table were eight veteran Silent Glow employees whose service record totaled 195 years. Mr. Sherman long has been active in association and industry work both in the power burner and range burner industries.

George S. "Scotty" Elder has been engaged by Malleable Iron Fittings Corp., Branford, Conn., to work closely with Harrison Lang, manager of the Branford oilburner division. Mr. Elder, most recently a field man for Petroleum Heat & Power Co., Stamford, Conn., also, for a number of years, worked in a similar capacity for Electrol. He is well known in the field, with an experience in oilheating that dates back to 1922.

Julian F. Warren has become sales manager, Delco-Heat Products, Rochester, N. Y. and has been succeeded as advertising and sales promotion manager by *Stuart J. Rice, Jr.* Mr. Warren began as a retail salesman for Delco-Heat and later joined the Butler Radiator Corp. as southeastern sales representative. He was appointed a Delco zone sales manager in the southeastern district in 1941 and three years later

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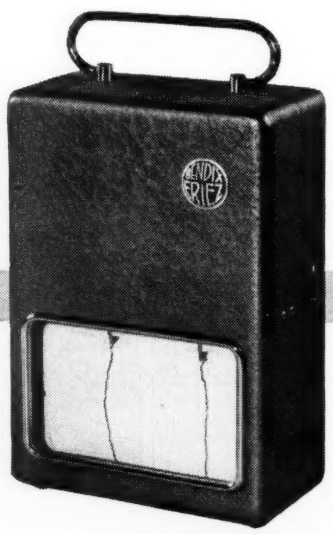

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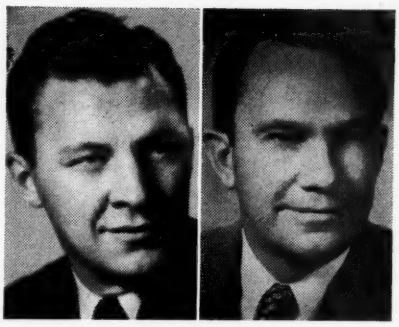

Rice **Warren**

advanced to the position of advertising and sales promotion manager. Mr. Rice has had previous experience with McGraw-Hill Publishing Co., Hutzler Advertising Agency and the Crossman Arms Co.

David Wepman was appointed Merchandising Manager for York-Shipley, Inc., York, Pa., effective November 15. Mr. Wepman formerly was with General Electric's oilheating division at Bloomfield, N. J., and more recently has been with Harold E. Sweeney Corp., Philadelphia distributor of York Heat equipment.

Charles E. Kramb has been appointed assistant general manager of home heating sales for Gulf Oil Corp., Pittsburgh, Pa. In this position, newly created as part of Gulf's reorganized marketing program, Mr. Kramb will be responsible for marketing of all home heating products throughout the domestic divisions. Another appointment saw *Donald C. Johns* become assistant general manager of commercial market sales, responsible for direct product sales to commercial establishments.

John Huber has joined the Home Office Sales Department, Controls Division, Perfex Corp., Milwaukee 7, Wis. Mr. Huber entered the heating field in 1926, working for the Heil Company in Milwaukee as an oilburner installation and serviceman. In 1929 he organized Heil Automatic of Lancaster, Pa. and operated the company for the past twenty years, with time out for two years' Army service in 1944 and 1945.

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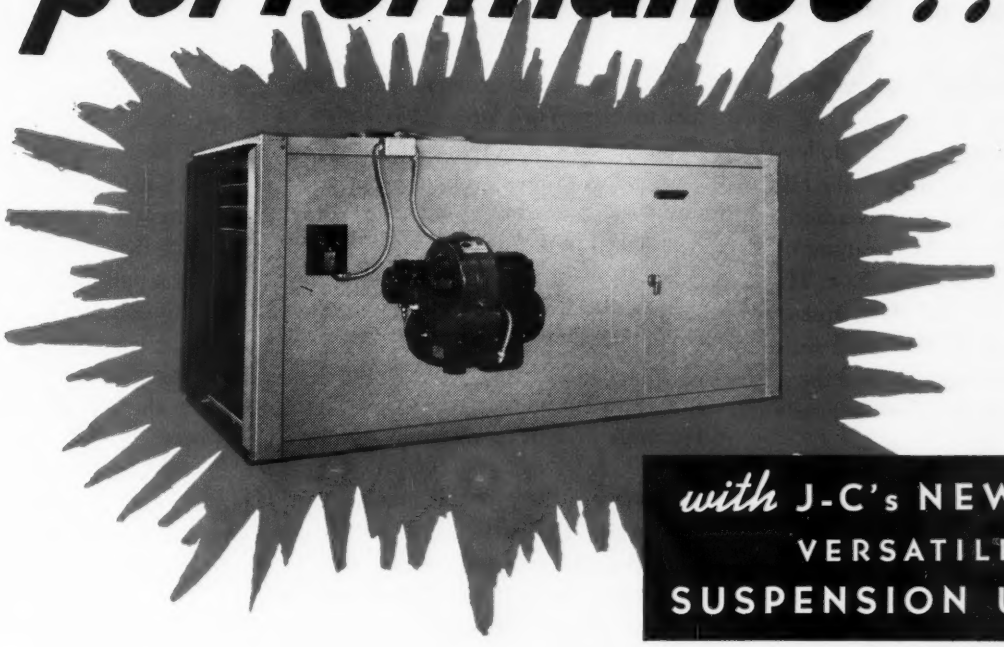

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AMERICA'S LARGEST AND MOST COMPLETE WARM AIR HEATING LINE.

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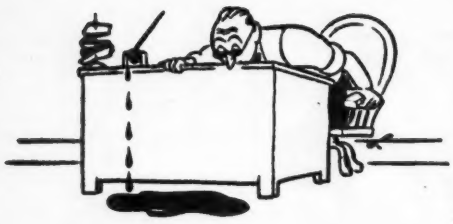


Editorial Leaks

At Chicago last month E. Holley Poe, gas pipeline promoter, gave the oil men assembled at the A.P.I. convention some "realistic" dope on the meaning of the natural gas invasion of the East. Though he admitted that realism frequently is synonymous with bad news, he indicated that encroachment of gas into the prime oilheating markets would not be without its sunny side.

Mr. Poe indicated that the decrease in demand for light and heavy fueloils as gas takes over the market would make possible a shift of refinery yields to make more gasoline. He did not say what the refiners should do with the additional gasoline after they had made it, but he did warn the industry's marketing branch against "worrying itself into a mass case of stomach ulcers." He also pointed out that the average-cents-per-thousand cost for gas at the well head now had doubled and may go higher. That was another bright spot for the oil industry.

The tone of Mr. Poe's address practically demanded resignation on the part of the petroleum industry. After all, he said, gas lines are not abstract theory but an accomplished fact—or nearly so. The oil industry should give up its best oilheating markets to gas, and plan to find new places to peddle their oil.

If the oil industry swallows such tripe it deserves to lose its markets. If it shows any inclination to defend those markets, it can hold them. We have had natural gas invasions of many oilheating markets in the past. In some it has slowed the rate of oilheating expansion, but nowhere has the industry actually lost gallonage if it showed any inclination to promote and develop oilheating demand.

A feature article elsewhere in this issue presents some convincing reasons why the petroleum industry must protect and expand its burning oil market if it is to keep the crude barrel in balance and improve its operating statements. The six to ten cents per thousand feet Mr. Poe's gas companies pay for gas in the field will not go far toward offsetting severe losses due to drop in heating oil demand.

◈

A group of oilburner manufacturers met in New York late in November to discuss ways and means of raising a fund for general promotion of the oilheating industry. Something around $500,000 is required to make a decent showing in general magazines and newspapers. Such a fund, though not large in comparison with the industry promotional campaigns of our competitors and others, is more than oilburner manufacturers ever have accumulated in the past.

In view of the probable increasing intensity of the "Battle of the Fuels" in the years immediately ahead, the oilheating industry certainly cannot neglect the public education so necessary if we are to make a successful competitive bid for our share of the market.

Three courses are open to the oilheating industry: It can give up its traditional market and sell equipment for other fuels; it can take such crumbs as fall to it in supplying an ever dwindling demand; or it can repeat the aggressive, hard-hitting merchandising that brought the industry through the depression years far ahead of its competitors. The first two alternatives require no positive action. The last requires vision and courage that has not been evident in this business since 1941.

Individual manufacturers and dealers, of course, will have to sell their own particular brand of equipment, but no one, two or three such organizations can sell the basic advantages of oil heat for the entire industry—nor should they be expected to. General promotion of the industry is a job for all companies and all elements of the oilheating business.

◈

At the risk of being thought unduly sensitive we would like to register mild surprise at the October issue of *Petroleum Newsnotes*, Vol. 4, No. 4, of the American *Petroleum* Institute. This four-page clip-sheet presents a variety of tid-bits that newspaper editors might use for fillers. This particular issue contains 28 short items and four cartoon illustrations with explanatory captions.

The reason for our surprise is that five of these items, and three of the four cartoons deal with natural gas. Burning oils get two mentions and no cartoons. Of the total space in the four pages, items and illustrations mentioning natural gas occupy 39.6%, and the two items in which burning oils are mentioned represent very little more than 3% of total space.

Burning oils are only one of many products from petroleum, while natural gas is a separate source of energy. Even with this in mind we feel the gas emphasis in the last issue of *Petroleum Newsnotes* is out of proportion to its importance to the Institute and the petroleum industry.

Some measure of what natural gas means to an oil company is contained in a recent annual report. This producing, refining and marketing company got just 20 cents of revenue from gas sales out of each $100 of income.

If we are just a little bewildered by API's Department of Information, it is only because we cannot figure out which team they are backing.

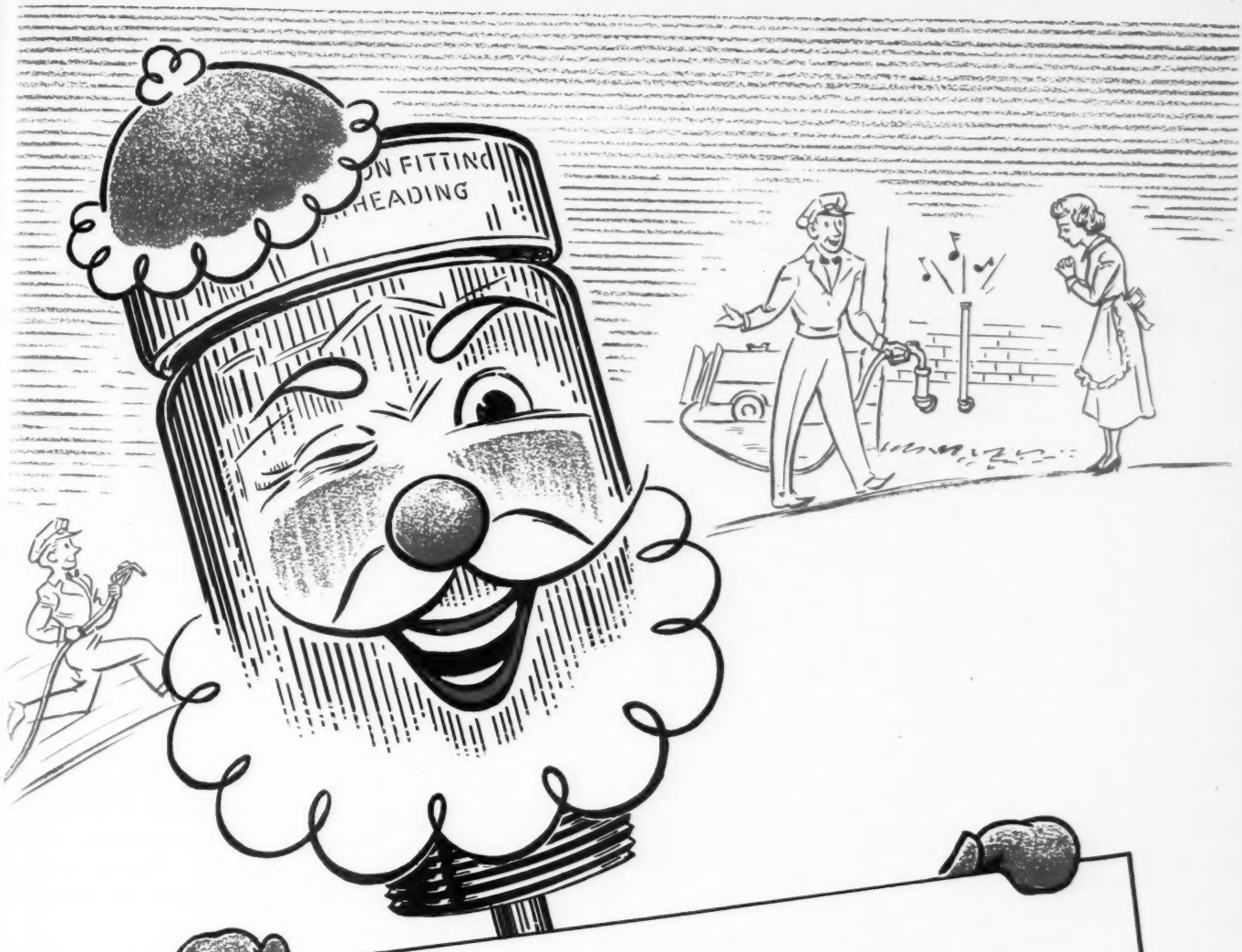
◈

About the time this issue is delivered the last of the annual information questionnaires should have been mailed to supply data for the Annual Statistical issue. This January issue has become the basis of most oilheating industry data used by government agencies, major oil companies, heating manufacturers and dealers, and researchers generally.

Published information comes off the returns from a mailing to 5,000 dealers in oil and oilburning equipment. Every return is important. No dealer is too small or too large to be significant, since it takes a true cross section of the industry to get an accurate picture of its activities.

Not every dealer is covered by the questionnaire. Selection is made on the type of dealer and his geographical location. This makes it doubly important that those who get the questionnaire supply all the information that pertains to them as quickly as possible.

All returns are confidential and no individual data is revealed.



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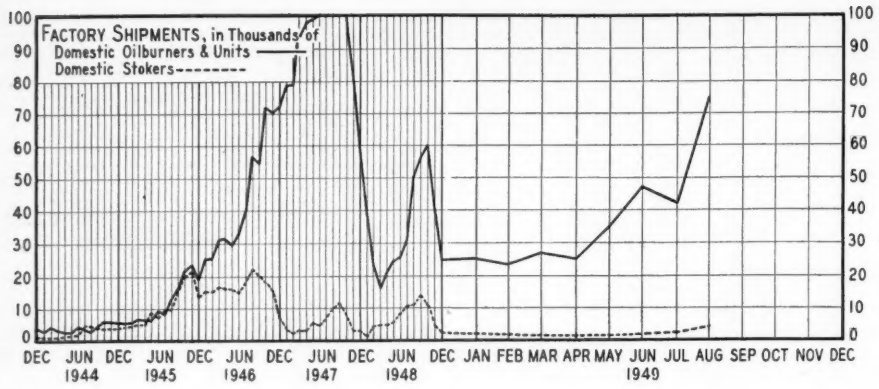

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units ——
Domestic Stokers--------
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1944 1945 1946 1947 1948 1949

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 152 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	AUGUST			EIGHT MONTHS		
	1949	1948	Percent Change	1949	1948	Percent Change
Conversion	55,371	34,706	+ 59.5	229,314	158,143	+ 45.0
Boiler Units	6,464	4,318	+ 49.7	27,762	20,845	+ 33.2
Furnace Units	13,023	11,072	+ 17.6	49,482	51,209	— 3.4
All Domestic	74,858	50,096	+ 49.4	306,558	230,197	+ 33.2
Commercial	2,684	2,621	+ 2.4	15,550	18,894	— 17.7
Total	77,543	52,717	+ 47.1	322,109	249,091	+ 29.3

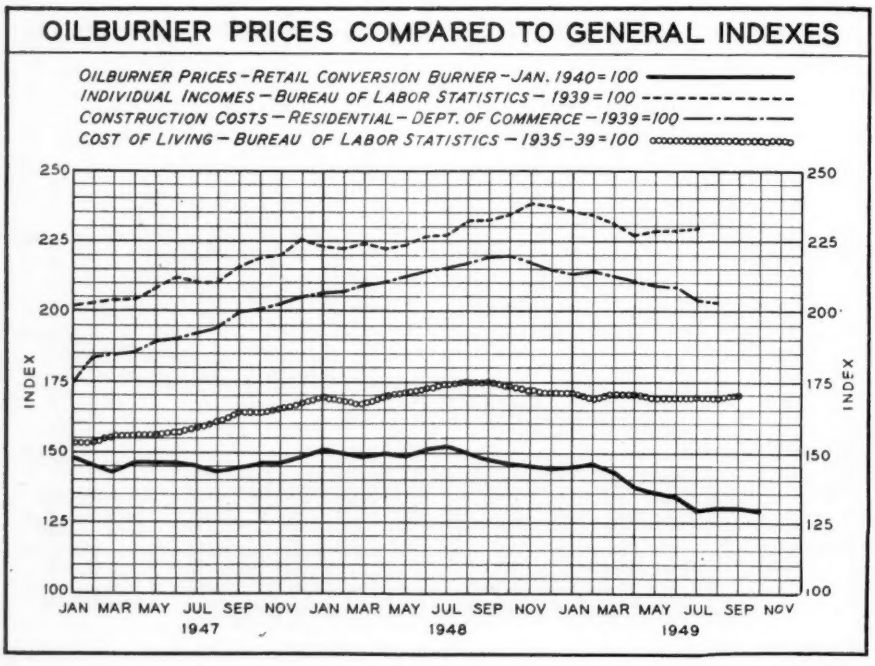
	SEPTEMBER			NINE MONTHS		
	1949	1948	Percent Change	1949	1948	Percent Change
Conversion	74,427	39,238	+ 89.7	303,741	197,381	+ 53.9
Boiler Units	8,492	5,966	+ 42.3	36,254	26,811	+ 35.2
Furnace Units	13,947	11,495	+ 21.3	63,429	62,704	+ 1.2
All Domestic	96,866	56,699	+ 70.8	403,424	286,896	+ 40.6
Commercial	2,928	2,486	+ 17.8	18,478	21,380	— 13.6
Total	99,794	59,185	+ 68.6	421,903	308,276	+ 36.9

October Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
October Aver.	$315	$669	$573
September Aver.	317	669	561

Price Index: Conversion Burners: January 1940 is 100%

	WHOLESALE				RETAIL			
October	128.1	Six months ago	134.0	October	128.9	Six months ago	137.2
September	130.9	Year ago	144.7	September	130.2	Year ago	145.7


OILBURNER PRICES COMPARED TO GENERAL INDEXES
OILBURNER PRICES – RETAIL CONVERSION BURNER – JAN. 1940 = 100
INDIVIDUAL INCOMES – BUREAU OF LABOR STATISTICS – 1939 = 100
CONSTRUCTION COSTS – RESIDENTIAL – DEPT. OF COMMERCE – 1939 = 100
COST OF LIVING – BUREAU OF LABOR STATISTICS – 1935-39 = 100
INDEX
250
225
200
175
150
125
100
JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV JAN MAR MAY JUL SEP NOV
1947 1948 1949

Oilheating Trends

INSTALLATIONS of domestic oilburners and units in October are estimated at 75,193, which is 22% above October installations last year. For the ten months to the end of October estimated installations were 481,009 or 30% above the 369,574 installed in the first ten months of 1948. If the 30% rise should continue through the two remaining months of the year the totals would come near 600,000 but there are indications that the steel strike has had some retarding effect which will probably reduce the rate of gain during that period.

October installations were divided: New homes 22,919; Replacements of old oilburners 6,903; Conversions from other fuels 45,371. For the ten-month period the approximate division was: New homes 143,959; Replacements of old oilburners 62,609; Conversions from other fuels 274,441.

BURNER STOCKS: Stocks of domestic burners and units in dealer hands climbed to 73,639 by the end of October where they had been approximately 62,440 a month earlier. Factory stocks at the end of August, latest available data, were 44,093.

STEEL SHORTAGE EFFECT: Among all reporting dealers for October 20% say that they were held up on making one or more installations because they could not get materials as a result of the steel shortage. Approximately half of the dealers have been warned by their factory connections that there will be delay in getting such things as boiler or furnace units, tanks, and some sizes of pipe. It may be that the ending of the strike at mid-November was early enough to avoid too serious tie-ups for the oilheating industry. The dates given by manufacturers indicating when they expected to have to stop shipments ranged mostly between November 15 and January 1, but it was also indicated that there would be a time lag of about six weeks after the steel strike was settled before new steel could get into our industry, be manufactured into product and shipped. Thus, there is indication that some dealers will be held back on making installations through the balance of this calendar year.

COAL STRIKE EFFECT: There has always been considerable question as to

whether or not John Lewis is the patron saint of oilheating. One group believes that a lot of folks buy oilburners because they are either afraid of coal shortages or simply want to express antagonism toward Lewis and his methods. Among those reporting this month 37% hold this view and say that the coal strike has definitely helped their oilburner sale. The other 63% vote the other way, believing the people buy oilheating to get better living and have no concern about Lewis one way or the other. The group that believes Lewis helps our business and that their sales are now better because of the coal strike were asked whether this result comes through their sales departments promoting the idea or general public antagonism. The vote was sales department influence 20%, public antagonism influence 80%.

FUELOIL VOLUME: Because the oil industry economists are warning refiners that they must push up their distillate yields to have enough for this winter the fueloil distributors were asked this month whether their suppliers were discussing with them any limitation on the volume of oil they could get this winter. From the answers it is apparent that the industry is confident of its ability to supply everything needed since only one fueloil marketer reports any type of restriction.

FUELOIL PRICE: With wholesale markets soft in some parts of the country it was interesting to check this month how much price cutting from established levels was being done at the end of October. Asked whether there was any significant amount of price cutting being done in their markets, 63% of those reporting from New England voted yes, 40% from Mid-Atlantic areas, 13% from the Midwest, 20% from the West Coast and an average of 35% for the country as a whole.

It appears that in New England about 12% of the marketers are selling below posted prices by an average of about .8¢; in the Mid-Atlantic areas reports indicate that about 8% of the companies are selling at an average of .7¢ below posted: in the Midwest about 8% of companies are selling at an average of .5¢ under the market and on the West Coast a very few marketers are reported selling at an average of .5¢ below. For the country as a whole about 8% of marketers are selling at an average of .6¢ below posted.

To learn what effect the awareness of price cutting would have on the margin attitude of fueloil distributors, they were asked what their present margins are and what they think they should be, considering the general competitive situation stacked against today's operating cost. The margin figures that follow make no allowance one way or the other for the type of operation but rather are a measure of the industry's state of mind on whether or not margins are what they should be. All those reporting from New England have an average actual margin of 3.0¢ . . . their composite opinion is

(Continued on page 92)

Oilburner* and Building Permits

OILBURNERS					DWELLINGS			
October		10 MONTHS			October		10 MONTHS	
1949	1948	1949	1948		1949	1948	1949	1948
89	..	550	..	Albany, N. Y.	..	..	..	..
817	91	4726	1221	Baltimore, Md.	208	242	2377	3410
..	..	..	..	Binghamton, N. Y.	9	6	92	128
..	..	..	..	Bloomfield, N. J.	10	11	74	82
..	446	..	..	Boston, Mass.	44	14	304	270
189	162	900	776	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	46	23	364	285
..	..	..	..	Des Moines, Ia.	151	81	1050	823
247	1456	5775	..	Detroit, Mich.	1169	342	10186	6164
89	30	450	351	Elizabeth, N. J.	7	0	47	20
54	..	291	..	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	26	23	180	237
..	..	..	..	Hackensack, N. J.	4	2	52	42
160	193	884	1157	Hartford, Conn.	..	..	..	..
..	..	..	..	Hudson County, N. J.	..	..	..	..
40	26	289	159	Irvington, N. J.	0	0	19	44
..	..	..	..	Lynn, Mass.	28	24	180	154
..	30	..	..	Meriden, Conn.	..	..	..	..
489	270	3096	1718	Milwaukee, Wisc.	325	109	1804	1550
216	200	912	1019	Minneapolis, Minn.	190	131	1480	1161
42	20	231	199	Montclair, N. J.	..	..	..	..
..	..	..	..	Morristown, N. J.	..	..	..	..
69	41	370	217	Mt. Vernon, N. Y.	..	..	..	..
..	176	..	..	Newark, N. J.	..	..	..	..
8	82	619	664	New Bedford, Mass.	..	..	..	..
138	..	589	..	New Haven, Conn.	..	..	..	..
..	0	..	0	New Orleans, La.	..	..	..	..
63	19	272	121	New Rochelle, N. Y.	3	14	40	91
..	5903	..	50394	New York City (total)	..	..	..	..
2478	5393	..	46803	Brooklyn-Queens	..	..	..	..
709	510	4885	3591	Manhattan, Bronx, Rchd	..	..	..	..
105	69	1084	1123	Norfolk, Va.	42	43	566	514
..	1	..	11	Oakland, Calif.	..	..	..	..
160	72	1451	866	Omaha, Neb.	87	38	580	612
32	44	178	149	Orange, N. J.	3	1	7	12
45	25	280	221	Passaic, N. J.	..	..	..	..
79	87	682	459	Paterson, N. J.	11	7	104	96
1564	1269	8018	5102	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	14	12	122	84
83	84	335	317	Portland, Me.	13	11	116	136
529	685	5533	4620	Portland, Ore.	177	139	1705	1526
48	46	209	168	Poughkeepsie, N. Y.	..	..	..	..
109	48	550	505	Providence, R. I.	21	20	154	163
..	..	..	..	Reading, Penna.	5	3	56	36
180	75	772	674	Richmond, Va.	43	67	594	819
343	210	2067	1401	Rochester, N. Y.	..	..	..	..
..	51	..	259	Rockville Center, N. Y.	..	31	..	190
71	47	271	204	Salem, Mass.	7	16	87	107
74	245	670	1444	St. Louis, Mo.	60	50	479	418
343	306	1809	1223	St. Paul, Minn.	108	97	660	..
47	54	414	590	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	147	146	1385	..
..	..	..	..	Springfield, Mass.	56	32	417	463
51	46	426	351	Stamford, Conn.	..	..	..	..
101	..	608	..	Syracuse, N. Y.	25	..	286	..
..	..	..	..	Trenton, N. J.	5	4	68	29
..	..	..	..	Utica, N. Y.	12	5	76	110
256	262	1158	1396	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	21	14	156	136
44	23	234	183	White Plains, N. Y.	21	1	95	66
212	140	967	807	Wilmington, Del.	14	5	98	102
..	203	..	..	Worcester, Mass.	..	..	..	..
106	58	524	278	Yonkers, N. Y.	..	..	..	..
7619	6995	45266	33274	*Totals*	3087	1733	23729	19890
+8.9		+36.0		*Percent Change*	+78.1		+19.3	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

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Is Fueloil Worth Promoting?

When Bottom Half of the Barrel Suffers, All Profits Shrink

by

Robert Gray

WHY ARE THE PROFITS of the large oil companies this year running 25% or more below last year? Is it because people are using less gasoline, or that gasoline prices have been forced down below the profit point? Of course not . . . the reverse is true in each instance. Gasoline volume is up and prices are up. But fueloil volume through most of the year has been reduced, with the result that it backed up at the refineries and terminals until prices fell sharply. A good many refineries were not able to operate with a smooth flow and the natural result was that their manufacturing costs were spotty.

The thing is coming back—more dealers and consumers are buying fueloils, particularly distillates and residuals, and the prices are firming up for a better profit showing in these later months of the year. But it is vital to recognize that the market situation in fueloils, be it good or bad, can have a serious impact on the refiners' profit and loss statements. That little squeeze play that was worked this year by a combination of mother nature with a warm winter and the fueloil marketers with their slow taking ways cost the profit side of the refiners' ledgers literally hundreds of millions of dollars.

In the minds of a few refiners that is another indictment against fueloil; it's a product you can't depend on, you can't control it as you can gasoline. Such men, after this year's experience, are farther than ever removed from any real interest in promoting the continuation and expansion of fueloil sales. But fortunately most oil men in the upper brackets now recognize that they want heating oil volume, and more of it, because they need it to support the economics of the fuel barrel.

Today's question is a simple one. Do the refiners recognize their need of fueloil volume enough to do something about protecting it? Should they protect it to the extent of actively promoting its sale to the public and openly competing with natural gas?

Some folks have believed that because most gas is a by-product of oil wells and brings revenue to the oil producers they would feel inclined to do everything they could to help its progress. Except in a few instances, that is a mistaken impression. Many important oil men now say that the revenue they get from gas at the well is trivial because they sell it so cheaply, and certainly they wouldn't be inclined to let it get in the way of their real petroleum products.

Attitude Is Encouraging

To the fueloil and oilheating marketer this is an encouraging attitude. Moreover, the question of what to do about the growth of natural gas sales and their inroads on the fueloil market is beginning to be asked by high level oil men . . . not many but one here and there.

During the war years when middle distillates were scarce, gas for fuel was blessed by the oil industry generally—in fact the oil industry was principally responsible for having gas in the Big and Little Inch Lines. They were thinking then that with Diesel locomotives increasing so fast there would be a continuing shortage of heating oils. The fueloil stringency in the winter of 1947-48 made this view even stronger in the minds of some top men. Two major oil company presidents and one chairman of the board made public statements that we should stop putting in oilburners.

But the diesel fuel requirements don't seem to be mounting very fast. Of course they are rising in percent, but the volume is still small. Charles F. Kettering, vice-president of General Motors and the real daddy of the diesel locomotive industry, has pointed out in his book that when all railroads are dieselized they will require only 60,000 barrels a day. That's pretty small compared to the amount of distillate that oilheating uses—at least 8 times as much.

Why is natural gas getting so many headlines and making so much progress? Is it because it's such a good fuel? It is a satisfactory fuel in some ways but its real surge just now is because pipelines are such a bonanza for the stock and bond promoters. When word got around about how many millions were made by the promoters of gas in the Big and Little Inch Lines and how fast the public bought the securities, Wall Street sat up and asked how long has this been going on? The public, through the promoters, paid the Government for the lines more than they cost.

It was clear that here was a magic combination. The public felt that since it was natural gas to be transported, the stuff must be free—it came out of the ground. Then the public service commissions or the Federal Power Commission would allow prices for the gas that would return a good rate on the investment, as with all public utilities. So we have a rash of pipeline promotions and the public continues to absorb the security issues.

The investment houses and the gas associations have been very effective in their public relations work. Natural gas has gotten a lot of free publicity and occasionally it is misleading. A typical example of this is in Baltimore.

There have been several forms of announcements about Baltimore getting natural gas next spring and the newspapers have given them a good play. The strongest emphasis is on the fact that natural gas is going to save the citizens seven million dollars a year. What

is not said is that most of any such saving will be for cooking and water heating users. Home heating rates may be cheaper on a Btu basis than they are now but not necessarily so. In Washington, 40 miles away, natural gas for heating is the same price per Btu as the old manufactured gas and considerably higher priced than fueloil. Yet the newspapers leave the impression that everything is going to be cheap. The mayor of Baltimore publicly praised the gas folks for being so nice to the city, although nothing has happened yet, and whatever may happen is several months away.

Natural gas is coming to Staten Island this year. It came into the first neighborhood in August. New York City's acting mayor and other dignitaries went down to open the first valve, with a lot of fanfare and newspaper photographers.

Yes, the natural gas crowd and the bond salesmen have an excellent free press relations setup, much better than anything we've ever seen in our own oil industry.

Suppose natural gas heating keeps on growing, as it probably will. Does that mean that the oil industry will lose its present heating oil volume? Certainly not in the near future at least. Even in the Midwest cities like Minneapolis and St. Louis and Detroit, where natural gas is cheap compared to fueloil for heating there is no mass exodus from oil to gas, but there's a steady small bleeding. New installations in Minneapolis have dropped to about a one-to-seven ratio with gas. There's not enough fighting spirit left in the oilheating crowd, principally because without sufficient new sales for profits the boys can't spend money freely.

Down in St. Louis the local dealers are putting up a fight with advertising campaigns paid for by these small companies . . . the same is true in Baltimore, in Washington, Philadelphia, Westchester County, New York, and several other markets. The Standard Oil Co. of Ohio is doing the only consistent job of fueloil promotion among the majors.

In those Midwest cities stretching from Denver to Pittsburgh where natural gas is cheap, should we advocate that heating oil prices be reduced to the level of gas? We should not go all the way down, because we want to keep fueloil profitable enough to be worth fighting for. Some concessions might be advisable, but on the other hand the oil industry could have quite a voice in getting those lowest gas prices raised to a more rational Btu comparison.

Gas Almost Free at Wells

Why are gas prices so low today in some of those cities? It's because the oil industry almost gives them the gas at the wells. This summer a spokesman for Standard of Jersey pointed out that it costs five times as much to move gas in a pipeline to the East Coast as it does to bring an equivalent amount of heat in fueloil by tanker. So it isn't the transportation that's cheap—it's the original gas.

Twenty and thirty years ago heating oil brought the refiners a lot less than it was worth, because any price was better than dumping it on the creek banks as they had been doing. Today gas is in a similar position. Only recently a lot of it was being burned in flares at the wells. Both the Federal and State regulatory commissions objected to this waste of energy, so the oil companies, often just to get rid of that interference, made cheap deals with anyone who wanted to run pipes into the field.

The average price paid at the well today is around six cents a thousand. Col. Ernest Thompson of the Texas Railroad Commission said this summer that to be equivalent to the value of oil at the well, gas should bring 44¢ a thousand. If gas did bring any such figure at the wells and had its present high cost of pipeline transportation, it would indeed be a luxury fuel. That is not the recommendation, but it should be brought somewhere into line with competition in the Midwest. Today the oil industry is subsidizing its own competitor and being hurt in the process.

There's another, and temporarily much easier approach to the problem . . . sales promotion and advertising. Perhaps there should be a large amount of sales assistance by the major oil companies, in the form of broad scale individual advertising and public relations efforts, joining with local dealer groups and assisting them financially in their cooperative undertakings.

Real selling power can overcome some genuine handicaps. My eyes were opened on this point a short time ago out in Waterloo, Iowa. Since the war ended four years ago this summer there have been installed in Waterloo and its suburbs 1,796 oilburners (that was up to July 1), 717 gasburners and 860 coal stokers. There's nothing strange about that picture until you learn that the price of manufactured gas for heating in that city is 96% higher than the equivalent fueloil cost, yet they sold nearly half as many installations.

Under those conditions you can't imagine a gasburner salesman having much to say about fuel cost comparisons, but he obviously talked about a lot of other things that made gas look attractive. Then there's another side of the story. Stoker coal of 12,500 Btu is $13.00 a ton. So fueloil at 11.4¢ is 57% higher than the stoker heating cost, yet twice as many oilburners were sold. Fuel cost then, in the domestic heating field, is far from being the whole answer. It's nice to have the cost advantage, but vigorous merchandising and sales promotion can overcome many handicaps.

In distillate fuels, the oil industry can lose to gas only its industry vitality and growth rate. As other products increase in demand, distillate yields will shrink. But we must remember that other types of fueloil will also be affected. Only about 20% of the capacity

of a natural gas pipeline can be used for home heating, due to the difficult seasonal load factor. The other 80% will go mostly into industry. An industrial user, unlike the householder, will switch in a minute if gas costs less than residual oil, and while the new refining processes tend to reduce the amounts of residual there will still be quite a few million barrels to sell for many years.

Kerosene will be affected. The gas people make space heaters, too, and the New England kerosene range burners can be displaced by gas burners for a very few dollars.

The oil industry had its 90th birthday this year. Throughout 75 of those 90 years it had to throw away a part of its output . . . there was no market for some of the products. Only in the past 15 years have virtually all segments of the barrel been fully utilized. Those have been the industry's best 15 years for growth and for profits. True, we could go back to dumping fuels, either literally or figuratively, without bankrupting the industry, but where's the fun in just staying alive? This industry has been exciting because it was always going places.

In the world oil economy, the fuels, from kerosene to residual, account for half of the barrel. If that half doesn't continue to maintain a healthy rate of growth the whole barrel will suffer. We learned earlier this year that when fueloil activity slows down five or ten per cent prices drop twenty-five and thirty.

It isn't too early nor too late to take active steps in the direction indicated. The time has come to blow the trumpet for a real battle of the fuels. We've been complacent long enough, and primarily for the benefit and amusement of stock and bond salesmen.

Oil Industry Comments On The Foregoing Article

Before publication, the paper "Is Fueloil Worth Promoting" was brought to the notice of a number of oil industry executives. Their responses, from which pertinent paragraphs follow, indicate an awareness of the problem that could bring favorable action.

SUN OIL CO.
Philadelphia

You have put together a very good story on a more or less controversial subject. Many of the points you make are subject to argument pro and con, and I think different people could substantiate their own points of view which might differ considerably. The fueloil heating load is naturally very substantial and I think there is no question but what the oil industry has a great deal of interest in maintaining and promoting it in the interest of increasing it in the future.

You recently had an article in your magazine decrying the emphasis which some refiners are placing on the tankage problem in which you expressed annoyance with repeated warnings that increased tankage must be provided at the jobber and resale level as well as by the householder. Very frankly, the highly seasonal nature of the heating oil business and the small individual storage tanks installed in the average homes are two reasons why this heating oil business is less attractive than it otherwise might be.

In your recent paper you are making a plea in the interest of keeping fueloil costs competitive with natural gas. One reason why fueloil costs are higher than they otherwise might be is the extreme seasonal fluctuation in deliveries from the refinery and the necessity of delivery to the ultimate consumer on a coal equivalent basis of about one ton per delivery. A lot of time, energy, and money has been put into programs to convince builders and home owners of providing increased individual storage and I certainly regret seeing anything in print which would tend to discourage this possibility, particularly along the lines of your resigned attitude that the 275-gallon tank is here to stay.

In order to keep domestic heating oil competitive with natural gas, the industry should take advantage of every possibility to reduce distribution costs of fueloil and the small individual tankage is one of the major items going to make up the overall handling costs at the retail level. My honest opinion is that oilburners will increase in the future and natural gas distribution will also gain additional customers. In those areas where the price relationship is in favor of gas, gas will probably get the major portion of the new installations. I doubt that there will ever be such a great difference in the cost of the two fuels that people will junk existing oil equipment in favor of new gas burners but there is a possibility that when oil burners need to be replaced, gas might get the business if the fuel costs were lower.

K. E. DE ROSAY
Manager Fueloil Sales

* * *

KENDALL REFINING CO.
Bradford, Penna.

It is my personal opinion that the oil industry leaned over too far backward in its concern about heating oil supplies and possible Governmental action with the net result that it is going to take a lot of preaching for the industry to get its heating oil marketing train back on the track and going places again. Natural gas is going to be a formidable competitor, and, to meet its competition, the oil industry and the heating people have

Typical Gas and Oil Heating Fuel Costs

	Gas, Btu per cu. ft.	*Gas Cost per MCF*	*Gas Cost Per Therm**	*To Equal Gas Fueloil per Gal.*	*Actual Fueloil per Gal.*
Brooklyn	537	79.1¢	14.7¢	20.6¢	11.9¢
Philadelphia	530	60.2	11.4	16.0	11.5
Washington	1100	114.0	10.4	14.6	12.2
Boston	528	60.7	11.5	16.1	11.9
Syracuse	1000	80.2	8.0	11.2	12.3
Buffalo	900	73.3	8.1	11.3	12.8
Detroit	1000	64.0	6.4	9.0	12.3
Cleveland	1075	55.0	5.1	7.1	12.7
Indianapolis	570	66.3	11.6	16.2	12.4
Chicago	800	71.2	8.9	12.5	11.8
Minneapolis	1000	63.0	6.3	8.8	11.7
St. Louis	970	65.0	6.7	9.4	11.3

*A Therm is 100,000 Btu.

got to work unitedly and hard, or there is plenty of trouble ahead. If we get another abnormally warm winter such as we had last year, the repercussions throughout the oil industry are going to be terrific.

J. B. FISHER
President

* * *

SOCONY-VACUUM OIL CO.
New York

This current very rapid expansion in gas transmission facilities is raising all kinds of problems in connection with heating oil and introduces a new element in forecasting demands for our distillates. Many of us are devoting considerable time to the study of this new factor, and your paper is, to my mind, a very helpful contribution to our thinking on the subject.

Because of the much higher cost of transporting a given amount of BTU's in the form of gas as compared to oil, the competitive position between oil and gas varies tremendously as we move away from the sources of supply, which are substantially the same for both of the fuels. Though I have not seen a precise evaluation of the point, my guess is that the bulk of our heating oil consumption lies in areas where the transportation factor is quite favorable to oil, and that for that reason the inroads of gas against oil for home heating are not likely to be very large in the aggregate.

B. B. JENNINGS
President

* * *

NATIONAL PETROLEUM COUNCIL
Washington

This is, indeed, a very informative and interesting article and brings out a number of points that I believe are not generally known either to consumers or members of the oil and gas industry.

There has developed an impression on the part of the public that there is an abundance of natural gas available to everyone everywhere as soon as pipelines can be laid to bring it to their door. Time will prove, or disprove, that possibility for many potential users. In the meantime, there is a plentiful supply of fueloil already at the door for new customers.

JAMES V. BROWN
Secretary-Treasurer

QUAKER MANUFACTURING CO.
Chicago

You rang the bell with these papers and I am sure that the major oil companies are not so unaware of their own problems of marketing that they do not realize that they must preserve their fueloil business which, in the main, cannot be transferred to some other use.

I still feel that chaos largely dominates our economy and that this has not been adjusted yet. If we do not enter into a socialistic form of economy, I am confident that we will, eventually, obtain proper adjustment.

I am confident that we must recognize that there are two automatic fuels—that gas can never replace oil in the majority of markets, but there are some markets where either through private investment, or public, or governmental subsidies that gas will be cheaper to use than oil and will this be the predominating fuel.

If this wakes up the oilburner industry to more aggressive selling effort, then I actually believe it will be good for the industry.

A. T. ATWILL
President

* * *

ARROW PETROLEUM CO.
Chicago

Your thinking indicates that the gas is being sold at too low a figure at the wells to be logical. It would seem to me that the Petroleum Industry should have established more equitable prices in order to protect their fueloils markets. There doesn't seem to be any possibility of any substantial price reduction in fueloil at the present time unless the price of crude oil should go down. If many independent refiners are to be kept in business the price of crude oil should go down, but even in the event that the crude oil price structure should drop, it is still questionable that fueloil prices would go any lower because as things stand at the present time the refiners who have a substantial portion of their own crude oil are making their profit at this end of the distribution stream.

There is no question that the Petroleum Industry and the Oil Burner Industry could do a much better job of selling oil heat. Those of us who are interested entirely in promoting oil heat have found ourselves in a very unfortunate position for a good many years as compared to our gas heat competition. The public knows that the users of gas heat were not rationed during the war years as were our fueloil customers. During the last shortage period, gas again performed very well. The public unfortunately is finding by reason of the action of the Petroleum Industry that gas is a low-priced dependable fuel and represents a much lower initial outlay for equipment. This situation has been aggravated by the statements which have been made by high officials in our industry which have further shaken the public's acceptance of fueloil as a dependable fuel.

I think the Petroleum Industry at large in the interest of promoting their own products, if for no other reason, should undertake to promote oilheating by every means at its command. There is very little evidence that this is being done, but from what I can see, the large suppliers are spending money and effort to acquire the new business that is being created on a direct basis.

Possibly it is too much to expect of an industry as complex as the Petroleum Industry, but an over-all constructive selling job should be initiated.

C. R. JONSWOLD
Executive Vice-President

* * *

SHERWOOD BROTHERS, INC.
Baltimore

It is an excellent paper and I very much enjoyed reading it, because I think, as you know, I certainly agree with you as to the fundamentals of our problem in competing with natural gas.

The situation here in Baltimore has not materially changed, but I do believe we are working up a good spirit among the Oil Heating Industry in this vicinity, but it is always hard to tell what support the movement is going to get from the major companies.

JOHN R. SHERWOOD
President

* * *

HARPER OIL CO., INC.
Long Island City, N. Y.

To me this is the best ammunition anybody has given us for competition against gas and it stimulates me with a new lease on life.

JOHN HARPER
President

Fuels Were Major Topic At A.P.I. Annual Meet

AMONG THE significant papers at the annual meeting of the American Petroleum Institute at Chicago in early November were a number on fuel problems, emphasizing the effect of other fuel competition, the results of fueloil growth applied to refinery changes, and the impressive shifts in ten years of energy sources within the country.

The Marketing Division session, the one of most direct interest to oilheating men, spotlighted a discussion of the penetration of natural gas into primary fueloil markets in a paper by E. Holley Poe, New York gas industry consultant and one of the group that piloted the Big Inch lines to gas. Poe took the position that natural gas will continue to grow rapidly in sales volume that it will displace considerable fueloil, but more coal, and that the oil industry will have to revamp its refinery yields away from the direction of continuing fueloil growth.

Stating that the growth of natural gas is no longer a matter of mathematical calculation or engineering speculation but an accomplished fact, Poe went on to show that while gas costs at the well have doubled in recent years this has had no adverse effect on the industry's expansion. (He did not mention that the average price paid for gas at the well is still less than a fifth of what it should be to equal the corresponding oil price at the well.) He criticized some oil men for wanting to get gas prices raised through legislation, as being contrary to the spirit of free enterprise.

In the ten year period 1939-48, inclusive, natural gas has shown a greater rise in demand than any of the other sources of energy, according to an interesting table included in Poe's paper.

At the end of 1948, there were 251,330 miles of natural gas transmission lines in the country and in the 12 month period June 30, 1948 to June 30, 1949 7,045 additional miles of line were authorized by the Federal Power Commission. The cost of moving gas by pipeline is roughly 1½¢ per thousand cubic feet per hundred miles.

Speaking of the New England and Mid-Atlantic markets soon to be reached by natural gas lines, Poe mentioned that the average present gas customer in those areas uses only one-fifth the quantity used by the national average gas customer, because of the high costs of manufactured gas. Using the University of Illinois comparative fuel cost figures which take into account burner efficiencies, he showed that gas for heating at 8¢ per therm would be equivalent to fueloil at 11.2¢ per gallon or to anthracite coal at $20 a ton, and he believes that 8¢ a therm is about the right price for heating gas.

Another paper of oilheating interest was presented to the Refining Division by Courtney C. Brown of Standard Oil Co. (N. J.), dealing with the effect on refinery operations of the changing seasonal pattern in petroleum demands. Summer was always the season of largest demand in the oil industry prior to 1936. In that year the lead moved to the winter half of the year and since then has continued to grow until today winter demands for total oil products are more than 10% above those of the summer. The reason is clear: in the 15 year period 1934-48, inc., gasoline demand increased an average of 5.5% a year while distillates went up an average of 10% annually.

Brown's principal recommendation is that refinery runs and yields be equalized as nearly as practical throughout the year and that the industry build about 55 million barrels of additional storage capacity to accomplish the interseason shifts. Total cost would not be over a hundred million dollars which would be very low compared to the cost of additional refinery capacity sufficient to meet peak needs as they arise.

For the current winter season, October-March, inclusive, Brown expects the demand for distillates and kerosene to be 1,670,000 barrels a day, or 21½% above the 1,370,000 B/D of last winter. He warned that current refinery runs are running considerably less than they should be to meet the needs ahead (all petroleum products), citing 4,800,000 B/D as the necessary rate for the winter months. For the six winter months a yield on kerosene and distillates of 27.8% will be necessary, and assuming a normal winter closing stocks on March 31 will then be down to 35 million barrels.

In the business session of the Marketing Division Harry J. Kennedy of Continental Oil, Ponca City, Okla., was re-elected vice-chairman and John Harper, of Harper Oil Co., Long Island City, N. Y., was elected secretary to succeed Hugh Thatcher of Chattanooga, who is retiring from business this month. J. Howard Marshall, chairman of the division, was re-elected to the top spot by the Institute's board.

The General Committee for Marketing consists of 65 members and of those the following are of particular interest to the fueloil and oilheating side of the industry: A. T. Atwill, Quaker Mfg. Co., Chicago; R. M. Bartlett, Gulf Oil, Pittsburgh; John Birmingham, White Fuel Corp., Boston; T. A. Crawford, Oil-Heat Institute, New York; M. F. Braeckel, Richfield Oil Corp., New York; W. C. Burns, Hartol Petroleum Corp., New York; John Harper, Harper Oil, Long Island City; M. O. Hickman, Empire State Petroleum Assn., Elmira, N. Y.; Carl R. Jonswold, Arrow Petroleum Co., Chicago; Henry L. Schwartz, Paragon Oil Co., Brooklyn; Fred Berg-

(Continued on page 92)

United States Energy Requirements, in Trillions of Btu

	1939	1948	Per Cent Increase	Per Cent of Total 1939	Per Cent of Total 1948
Anthracite coal	1,400	1,552	11	6.1	4.2
Bituminous coal	10,345	15,563	50	44.9	42.4
Petroleum	7,789	12,874	66	33.8	35.1
Natural gas	2,663	5,235	97	11.6	14.3
Water power	838	1,479	77	3.6	4.0
Total	23,035	36,703	60	100.0	100.0

(Notice that all petroleum products are lumped into one item. That includes the slower growing gasoline and lube oil segments. Separating oilheating would show that the number of domestic oilburners in use had grown 113% in the ten year period.)

Btu Supplied For One Cent By Oil, Coal, and Gas, Thousands

OIL

Cost ¢ per gal	Btu per gal, thousands								
	133	136	138	140	145	149	151	153	156
0.5	266.0	272.0	276.0	280.0	290.0	298.0	302.0	306.0	312.0
1.0	133.0	136.0	138.0	140.0	145.0	149.0	151.0	153.0	156.0
1.5	88.7	91.1	92.0	93.2	97.0	99.2	101.0	102.0	104.0
2.0	66.5	68.0	69.0	70.0	72.5	74.5	75.5	76.5	78.0
2.5	53.2	54.4	55.2	56.0	58.0	59.5	60.4	61.2	62.4
3.0	44.3	45.3	46.0	46.7	48.4	49.6	50.4	51.0	52.0
3.5	38.0	38.8	39.4	40.0	41.5	42.5	43.2	43.7	44.6
4.0	33.2	34.0	34.5	35.0	36.2	37.2	37.7	38.3	39.0
4.5	29.6	30.3	30.6	31.1	32.2	33.1	33.6	34.0	34.6
5.0	26.6	27.2	27.6	28.0	29.0	29.8	30.2	30.6	31.2
5.5	24.2	24.7	25.1	25.4	26.4	27.1	27.4	27.8	28.4
6.0	22.2	22.7	23.0	23.4	24.2	24.8	25.2	25.5	26.0
6.5	20.4	20.9	21.2	21.6	22.3	22.9	23.2	23.6	24.0
7.0	19.0	19.4	19.7	20.0	20.7	21.3	21.6	21.9	22.3
7.5	17.7	18.2	18.4	18.7	19.3	19.8	20.2	20.4	20.8
8.0	16.6	17.0	17.3	17.5	18.2	18.6	18.9	19.2	19.5
8.5	15.7	16.0	16.3	16.5	17.1	17.5	17.8	18.0	18.4
9.0	14.8	15.1	15.3	15.6	16.1	16.6	16.8	17.0	17.3
9.5	14.0	14.3	14.5	14.7	15.3	15.7	15.9	16.1	16.4
10.0	13.3	13.6	13.8	14.0	14.5	14.9	15.1	15.3	15.6
10.5	12.6	13.0	13.2	13.3	13.8	14.2	14.4	14.6	14.9
11.0	12.1	12.4	12.6	12.7	13.2	13.5	13.7	13.9	14.2
11.5	11.5	11.8	12.0	12.2	12.6	13.0	13.1	13.3	13.6
12.0	11.1	11.3	11.5	11.7	12.1	12.4	12.6	12.8	13.0
12.5	10.6	10.9	11.0	11.2	11.6	11.9	12.1	12.2	12.5
13.0	10.2	10.5	10.6	10.7	11.2	11.5	11.6	11.8	12.0
13.5	9.8	10.1	10.2	10.4	10.8	11.0	11.2	11.3	11.6
14.0	9.5	9.7	9.8	10.0	10.4	10.7	10.8	10.9	11.1
14.5	9.2	9.4	9.5	9.6	10.0	10.3	10.4	10.5	10.8
15.0	8.9	9.1	9.2	9.3	9.7	9.9	10.1	10.2	10.4
15.5	8.6	8.8	8.9	9.0	9.4	9.6	9.7	9.9	10.1
16.0	8.3	8.5	8.6	8.7	9.1	9.3	9.4	9.6	9.8
16.5	8.1	8.3	8.4	8.5	8.8	9.0	9.1	9.3	9.5
17.0	7.8	8.0	8.1	8.2	8.5	8.8	8.9	9.0	9.2
17.5	7.6	7.8	7.9	8.0	8.3	8.5	8.6	8.7	8.9
18.0	7.4	7.6	7.7	7.8	8.1	8.3	8.4	8.5	8.7
18.5	7.2	7.4	7.5	7.6	7.8	8.1	8.2	8.3	8.4
19.0	7.0	7.2	7.3	7.4	7.6	7.8	7.9	8.1	8.2
19.5	6.8	7.0	7.1	7.2	7.4	7.6	7.7	7.9	8.0
20.0	6.7	6.8	6.9	7.0	7.2	7.4	7.5	7.7	7.8

COAL

Cost $ per ton	Btu per pound, thousands								
	7	8	9	10	11	12	13	14	15
4.5	31.2	35.4	40.0	44.7	48.8	53.2	57.7	62.1	66.5
5.0	28.0	32.0	36.0	40.0	44.0	48.0	52.0	56.0	60.0
5.5	25.5	29.2	32.7	36.4	40.0	43.6	47.2	50.8	54.5
6.0	23.4	26.6	30.0	33.4	36.6	40.0	43.3	46.6	50.0
6.5	21.6	24.6	27.7	30.7	33.8	36.9	40.0	43.0	46.1
7.0	20.0	22.9	25.7	28.5	31.4	34.3	37.2	40.0	42.8
7.5	18.7	21.4	24.0	26.6	28.4	32.0	34.6	37.4	40.0
8.0	17.5	20.0	22.5	25.0	27.5	30.0	32.5	35.0	37.5
8.5	16.5	18.8	21.2	22.5	25.9	28.2	30.6	32.9	35.3
9.0	15.6	17.8	20.0	22.2	24.4	26.7	28.9	31.1	33.3
9.5	14.7	16.9	19.0	21.1	23.2	25.2	27.4	28.4	31.6
10.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	28.0	30.0
10.5	13.3	15.2	17.2	19.0	21.0	22.8	24.8	26.6	28.6
11.0	12.7	14.5	16.3	18.2	20.0	21.8	23.6	25.4	27.3
11.5	12.2	13.9	15.7	17.4	19.1	20.9	22.6	24.4	26.1
12.0	11.7	13.3	15.0	16.7	18.3	20.0	21.7	23.4	25.0
12.5	11.2	12.8	14.4	16.0	17.6	19.2	21.0	22.4	24.0
13.0	10.8	12.3	13.8	15.4	16.9	18.5	20.0	21.6	23.1
13.5	10.4	11.8	13.3	14.8	16.3	17.8	19.3	20.8	22.2
14.0	10.0	11.4	12.9	14.3	15.7	17.2	18.6	20.0	21.5
14.5	9.6	11.0	12.4	13.8	15.2	16.6	17.9	19.3	20.7
15.0	9.3	10.7	12.0	13.3	14.7	16.0	17.3	18.7	20.0
15.5	9.0	10.3	11.6	12.9	14.2	15.5	16.8	17.9	19.4
16.0	8.7	10.0	10.3	12.5	13.7	15.0	16.2	17.5	18.8
16.5	8.5	9.7	10.9	12.1	13.3	14.6	15.8	17.0	18.2
17.0	8.2	9.4	10.6	11.8	12.9	14.1	15.3	16.5	17.6
17.5	8.0	9.1	10.3	11.4	12.6	13.7	14.9	16.0	17.1
18.0	7.8	8.9	10.0	11.1	12.2	13.3	14.5	15.6	16.7
18.5	7.6	8.7	9.7	10.8	11.9	13.0	14.1	15.1	16.2
19.0	7.4	8.4	9.5	10.5	11.6	12.6	13.7	14.7	15.8
19.5	7.2	8.2	9.2	10.3	11.3	12.3	13.3	14.4	15.4
20.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0
20.5	6.8	7.8	8.8	9.7	10.7	11.7	12.7	13.6	14.6
21.0	6.7	7.6	8.6	9.5	10.5	11.4	12.4	13.3	14.3
21.5	6.5	7.4	8.4	9.3	10.2	11.2	12.1	13.0	13.9
22.0	6.4	7.3	8.2	9.1	10.0	10.9	11.8	12.7	13.6
22.5	6.2	7.1	8.0	8.9	9.8	10.7	11.5	12.4	13.3
23.0	6.1	7.0	7.8	8.7	9.5	10.4	11.3	12.2	13.1
23.5	6.0	6.8	7.6	8.5	9.3	10.2	11.1	11.9	12.8
24.0	5.8	6.7	7.5	8.3	9.1	10.0	10.8	11.7	12.5

GAS

Cost ¢ per M	Btu per cubic foot							Cost ¢ per therm	(1 therm = 100,000 Btu)
	500	550	600	800	900	1000	1100		
32	15.6	17.2	18.7	25.0	28.2	32.3	34.4	1.0	100.0
34	14.7	16.2	17.7	23.6	26.5	29.4	32.4	1.5	66.7
36	13.9	15.3	16.7	22.2	25.0	27.8	30.6	2.0	50.0
38	13.2	14.5	15.8	21.0	23.7	26.3	29.0	2.5	40.0
40	12.5	13.7	15.0	20.0	22.5	25.0	27.5	3.0	33.3
42	12.0	13.1	14.3	19.0	21.4	23.8	26.2	3.5	28.6
44	11.4	12.5	13.7	18.2	20.4	22.7	25.0	4.0	25.0
46	10.8	12.0	13.0	17.4	19.6	21.8	23.9	4.5	22.2
48	10.4	11.5	12.5	16.7	18.8	20.8	22.9	5.0	20.0
50	10.0	11.0	12.0	16.0	18.0	20.0	22.0	5.5	18.2
52	9.6	10.6	11.5	15.4	17.3	19.2	21.2	6.0	16.7
54	9.3	10.2	11.1	14.8	16.7	18.5	20.4	6.5	15.4
56	8.9	9.8	10.7	14.3	16.1	17.8	19.7	7.0	14.3
58	8.6	9.5	10.3	13.8	15.5	17.3	19.0	7.5	13.3
60	8.3	9.2	10.0	13.3	15.0	16.7	18.3	8.0	12.5
62	8.1	8.9	9.7	12.9	14.5	16.2	17.7	8.5	11.8
64	4.8	8.6	9.4	12.5	14.1	15.7	17.2	9.0	11.1
66	7.6	8.3	9.1	12.1	13.7	15.2	16.7	9.5	10.5
68	7.4	8.1	8.8	11.8	13.2	14.7	16.2	10.0	10.0
70	7.1	7.8	8.6	11.4	12.9	14.3	15.7	10.5	9.5
72	6.9	7.6	8.3	11.1	12.5	13.9	15.3	11.0	9.1
74	6.8	7.4	8.1	10.8	12.2	13.5	14.9	11.5	8.7
76	6.6	7.2	8.0	10.5	11.8	13.2	14.5	12.0	8.3
78	6.4	7.0	7.7	10.3	11.5	12.8	14.1	12.5	8.0
80	6.3	6.9	7.5	10.0	11.3	12.5	13.7	13.0	7.7
82	6.1	6.7	7.3	9.7	11.0	12.2	13.4	13.5	7.4
84	5.9	6.5	7.2	9.5	10.7	11.9	13.1	14.0	7.1
86	5.8	6.4	7.0	9.3	10.5	11.6	12.8	14.5	6.9
88	5.7	6.2	6.8	9.1	10.2	11.4	12.5	15.0	6.7
90	5.6	6.1	6.7	8.9	10.0	11.1	12.2	15.5	6.4
92	5.4	6.0	6.5	8.7	9.8	10.9	12.0	16.0	6.3
94	5.3	5.8	6.4	8.5	9.6	10.6	11.7	16.5	6.1
96	5.2	5.7	6.3	8.3	9.4	10.4	11.5	17.0	5.9
98	5.1	5.6	6.1	8.2	9.2	10.2	11.2	17.5	5.7
100	5.0	5.5	6.0	8.0	9.0	10.0	11.0	18.0	5.6
102	4.9	5.4	5.9	7.8	8.8	9.8	10.8	18.5	5.4
104	4.8	5.3	5.8	7.6	8.6	9.6	10.6	19.0	5.3
106	4.7	5.2	5.7	7.5	8.5	9.4	10.4	19.5	5.1
108	4.6	5.1	5.6	7.4	8.3	9.2	10.2	20.0	5.0
110	4.5	5.0	5.5	7.3	8.2	9.1	10.0	20.5	4.9

Comparative Fuel Prices

OHI Tables Show Heat Bought per Cent of Cost

by
W. O. Spiess

Many tables and formulae have been developed to calculate comparative costs of the three major fuels used for residential and commercial heating, but none issued recently has been more simple to use than the folder issued by Oil Heat Institute's Distribution Division, of which Mr. Spiess is National Secretary. The tables shown opposite are only one side of the folder. The back contains examples and explanations.

Copies of this folder are priced at 25 cents each, or 15 cents in lots of 100 or more. Payment should accompany all orders to Oil Heat Institute, 6 East 39th St., New York 16, N. Y.

Not long ago in a mid-western city where cheap natural gas is plentiful, a group of dealers was asked what fuel oil should be selling for to be competitive. The question touched off considerable discussion of sliding scale rates, basic rates, comparable Btu, etc., but there was no agreement on an answer to the question. More recently in New England, two dealers were asked how the local industry compared oil and coal costs. One replied, "200 gallons to the ton," and the other observed that coal dealers used a figure of 180. Evidently, it is not the general practice in either area to know precisely for quotation purposes the current relationship between the cost of different fuels.

Consider the effect of such a confusing practice on a home owner who thinks he might like to convert to automatic heating. In the course of listening to several oil burner salesmen he asks each how the cost of using oil would compare with his present coal costs, or the cost of the gas he might put in. From each burner dealer he gets a different answer, and probably no two of them are figured on the same basis or stated in the same terms. Obviously, the buyer's confidence and interest in oil heating will suffer a sharp setback.

It has been frequently and accurately observed that the buying public today is more technical minded than ever before, and more skeptical, too. As a general rule they know something about the technical aspects of their intended purchases and their interest even transcends this knowledge. As a result, their final decisions more frequently are based on the satisfaction of this technical thirst than was true pre-war. This being so, the question of comparative costs must be handled convincingly. A planned response, developed as part of the sales strategy, will reflect credit upon the dealer even if fuel oil does not happen to be the cheapest fuel.

For some months Oil-Heat Institute of America has seen the need for a handy form of an accurate way to make fuel cost comparisons. After exploring and discarding several approaches, it developed for members the tables reproduced on the opposite page. The common denominator in these tables, which permit comparisons between oil, coal and gas, is the number of Btu supplied for 1¢. The format of the tables is a durable jute card which becomes a pocket-sized (3½ x 8½) six pager when folded. The tables appear on the three pages inside the folds with explanatory text on the other three pages.

Use of the tables requires that two things be known about each fuel—(1) its unit cost in dollars per ton for coal, cents per gallon for oil, and cents per thousand cubic feet, or per "therm" (100,000 Btu), for gas; and (2) its unit heating value in Btu per pound for coal, Btu per gallon for oil, and Btu per cubic foot for gas. These data and ways of obtaining them are discussed in the folder's explanatory text.

To compare fuel costs, refer to the table applying to one of the fuels and in the left hand vertical column locate the unit cost of this fuel. Proceed horizontally to the vertical column headed with the Btu value of the fuel. The figure appearing at the intersection will be the number of thousands of Btu this fuel supplies for one cent. Do likewise for the other fuels. The table in which the highest Btu-for-one-cent figure is found will be the one applying to the cheapest fuel.

Of course, the tables do not consider the efficiencies at which the fuels will be utilized. They tell only the gross Btu obtainable for one cent. To convert the figures obtained from the tables into the net (or usable) Btu obtainable for one cent, multiply them by the efficiency at which it is assumed each fuel will be utilized.

To cite an example: Mixed gas (natural and manufactured) containing 800 Btu per cubic foot and costing 66¢ (average) per thousand cubic feet is to be compared with No. 2 oil containing 140,000 Btu per gallon and costing 11¢ per gallon. Which is the cheaper fuel to use, assuming the same efficiency for both?

In the gas table it is found that each penny will buy 12,100 Btu, and in the oil table that each penny will buy 12,700 Btu. Oil is the cheaper fuel to use.

* * *

Judging by letters and requests for additional copies of "Fuel Cost Tables," OHI has again come up with the answer to a common problem. Although these tables were intended primarily for use by members, the Institute has decided to make them available to the industry generally. It is believed that use of "Fuel Cost Tables" will make for accuracy in discussing comparative costs and that such uniformity will lead to greater public acceptance of oil heating products.

◈

Stewart New Head Of Oil & Gas Division

HUGH A. STEWART, an oil industry consultant of Denver, Colorado, has been named to head the Oil and Gas Division of the Department of the Interior, Washington. He succeeds Max Ball who resigned 11 months ago to return to private industry. Stewart was with the Texas Company's Rocky Mountain Div. from 1943 until this year.

Hollow Cone vs. Full Spray

Burner Air Pattern Determines Nozzle Selection

by
E. O. Olson*

SEVERAL TIMES EACH WEEK questions on the subject of hollow cone and full cone sprays come up in some form or other from someone who uses oilburner nozzles. A jobber wants to know "Should I stock hollow cone or full cone spray nozzles?" A serviceman wants to know what type of nozzle should go on this or that burner. A burner manufacturer asks "Which do you recommend, hollow cone or full cone sprays?" Frequently someone asks, "What is the difference anyway?" Then there are those who insist that there is no such thing as a full cone spray; that all pressure atomizing nozzles give hollow cone sprays.

It is not my intention here to give the final answer to all questions on the subject, but certainly it is time for some clarification of the subject and to give some helpful generalizations.

Fig. 1 illustrates the two basic spray types under consideration. A pure *hollow cone* spray would have no droplets in the center except those carried there by air currents or gravity. A flat plate held about two inches in front of the nozzle will show all the spray impinging on the circumference of a circle in a comparatively narrow band. It is possible to make such nozzles with a very thin cone of spray, but for good performance in an oilburner the extreme is not desirable. The question of "how hollow" sprays should be depends upon several factors such as flow rate and spray angle and it is not the purpose of this discussion to deal in those specifications. The degree of hollowness provided by nozzle manufacturers is determined by their research and judgment as to best average performance. It is natural, however, that the narrower spray angles will not be as definitely hollow cone as the wider spray angles.

A true *full cone* nozzle spraying on our flat plate would show uniform impingement across the whole circular cross-section of spray. It is possible to make a nozzle which delivers the bulk of the spray in the center with a small proportion of it at the outer edge. This could be correctly called a *heavy center* spray, and is preferred by a few burner designers. The other variation of the full cone spray is the *light center,* and this is the more common variety when deviating from the true full cone.

Somewhere between the pure hollow cone and full cone is the "relatively hollow" spray. This is a hollow cone spray but the spray cone is thicker, making the hollow center smaller and less distinct. This will also describe the hollow cone sprays in the narrower spray angles.

Each Type Has Place

The choice of one spray type or the other is not a matter of whim or opinion on the part of a serviceman or engineer. The choice is largely dictated by the particular combustion head or firing device in question. The requirements are becoming more and more clear cut and I shall attempt to show where each should be used to best advantage and why. It will be seen that the problem is not too difficult.

Fig. 2 is an actual diagram of the air delivery from an oilburner at the 1.35 GPH air setting. The velocities were plotted at the points shown in front of the burner tube and the points of equal velocity connected as in a contour map. The resultant "envelopes" indicate the position and shape of the air spray from the burner. It can at once be seen that practically no air is being delivered in the center directly in front of the nozzle and that the highest velocity area forms a cone with an included angle of approximately 80 degrees. This air spray shape is verified by firing different types of nozzles in the burner. A full cone nozzle gives a rumbling fire with a ball of smoke inside a bright cone or flame. A hollow cone nozzle gives a quiet, bright, hollow cone of fire with no smoke and a high CO_2. In this case there can be no question of the spray type that must be used, but the spray angle must be selected rather carefully. Narrow spray angles give somewhat the same results as full cone sprays.

Many burners using independently developed designs give some variety of the above performance. Some are very sensitive with respect to nozzle spray characteristics and some are less sensitive. Most of them require careful selection of the correct spray angle for quiet performance and best CO_2.

Another actual plot of burner air delivery is shown in Fig. 3. This shows a different type of air spray, one which quite obviously could use a full cone oil spray to good advantage. While the air delivery is not exactly uniform in cross section, it is probably as near to it as it will be possible to find. In this particular case the air delivery was not exactly symmetrical on all sides because of interference from the electrodes. A full cone nozzle in this burner gives a clean,

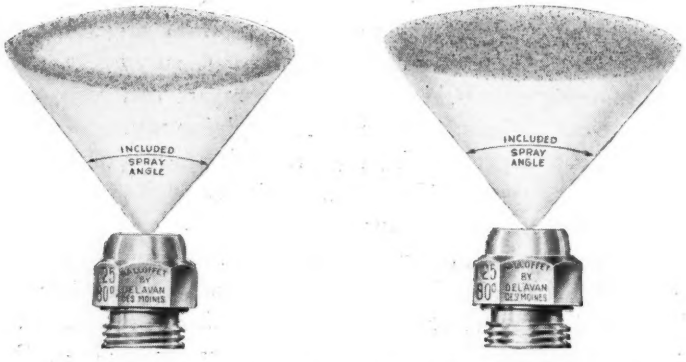


Fig. 1. *Hollow cone spray nozzle on left; full spray type on the right.*

*Chief Engineer, Delavan Mfg. Co., Des Moines, Ia.

quiet fire with reasonably good CO_2. A hollow cone nozzle gives a clean, quiet fire too, but the CO_2 drops off slightly with the same smoke rating.

In this type of burner the full cone spray has another advantage, particularly noticeable in the sizes 3.00 GPH and up. I refer to ignition. Generally the ignition of a full cone spray is smoother than with a hollow cone spray. Some ignition failures in this type of burner have been corrected by changing to full cone sprays. The reason seems to be that with full cone sprays the air-oil ratio is lower (richer mixture) in the primary ignition zone due to the better spray distribution with respect to air distribution. In other words, the burner air blows a hollow cone spray away from what should be the normal ignition zone for that particular burner.

Burners have been designed which give best CO_2 with a hard center 45° spray, but their performance from the standpoint of noise and pulsation is usually improved with the use of more conventional sprays.

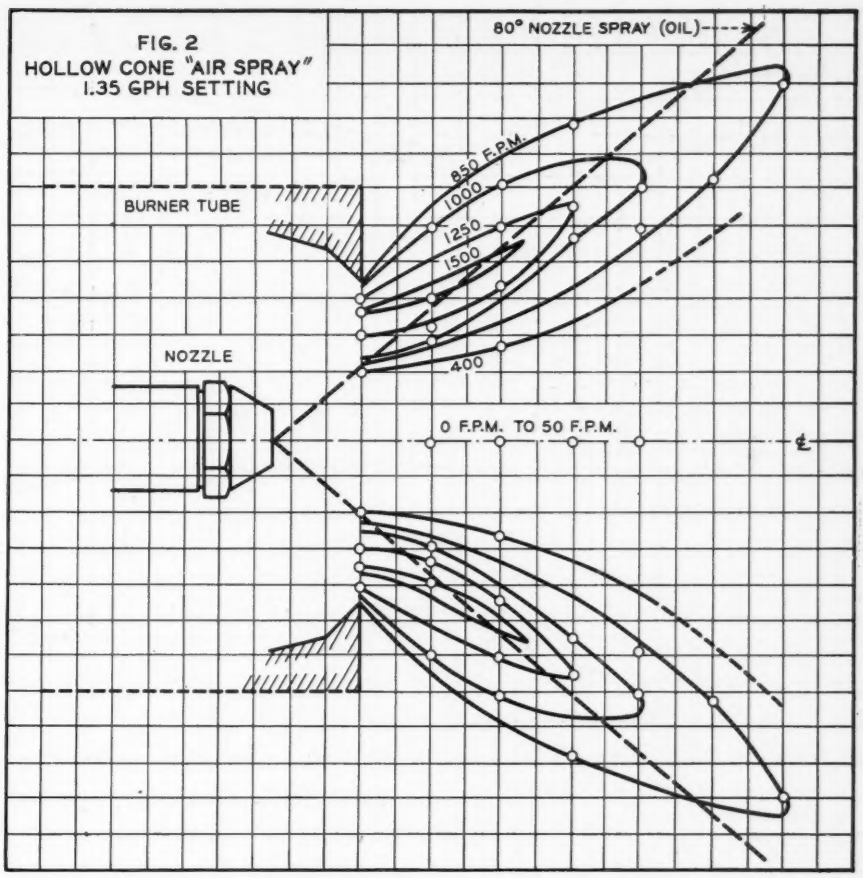


Fig. 2. *Scale: Each square equals 1/4".*

Spray Type and Pulsation

The relation of spray type to pulsation in oilfired units is a frequent topic for discussion and there seem to be several schools of thought on the subject.

It is a well known and proven fact that burners of the type in Fig. 2 can and do pulsate when equipped with full cone nozzles. The reason is quite obviously the fact that no air, or at least very little air, is delivered to the center of the spray. This non-uniformity of air-oil ratios results in varying rates of flame propagation and varying pressures in the combustion chamber. These pressure variations can be easily detected and even measured in many cases, and the result can be objectionable noise of the drum variety or just plain pulsation. Practically all of this type of noise can usually be eliminated in this type of firing head by the use of hollow cone nozzles of the proper spray angle. This does not refer to shutoff pulsations or "after flutter." Neither do I mean to infer that this is a cureall for pulsations. It is simply a means of correcting one source of noise and pulsation by the proper use of equipment.

Pulsations and noise in units equipped with full cone combustion heads have also been reduced or eliminated in many cases by the use of hollow cone nozzles. The reasons here are not as obvious as with the hollow cone air delivery, but the results are reasonable.

Looking at Fig. 3, it will be evident that it is practically impossible to exactly match air velocities to spray concentrations over the cross section of spray. The result with a full cone nozzle will be areas of lower air-fuel ratio, varying velocities and varying pressures, with a tendency to pulsate in some cases.

Help for Noisy Flame

A hollow cone nozzle in this burner will eliminate all possibility of low air-fuel ratio in the *center* of the flame. In fact, the center may be quite high in excess air, reducing the over-all CO_2. But as the air stream passes through the oil spray the extremely small droplets of spray may be distributed more or less in proportion to the air velocity, not by the spray pattern designed into the nozzle but by the air itself. In cases where a change to a hollow cone nozzle has stopped or reduced pulsation the indications are that this is what happens. This conclusion is based upon observation and not upon instrument readings other than CO_2, draft, and air velocities. Further work and testing are being undertaken on the subject.

There have been cases reported where pulsation has been reduced by changing from hollow cone to full cone nozzles. It has not been my good fortune to see such a case, but it could be the result of correct matching of air and oil sprays.

We have discussed all the questions mentioned at the beginning except the one about dealer and jobber nozzle stocks.

To the dealer I would suggest following the burner manufacturers' specifications as far as possible. For service on other burners just remember that the choice depends largely upon burner design. Remember also that while full cone sprays will work in some burners, hollow cone sprays will work in practically *all* burners, in the same sizes, that is. In the larger sizes, 3.00 GPH to 10.00 GPH, the spray type is usually not as critical from the standpoint of noise and efficiency, but full cone sprays give smoother ignition in a few cases. I realize that this is not telling you what to stock,

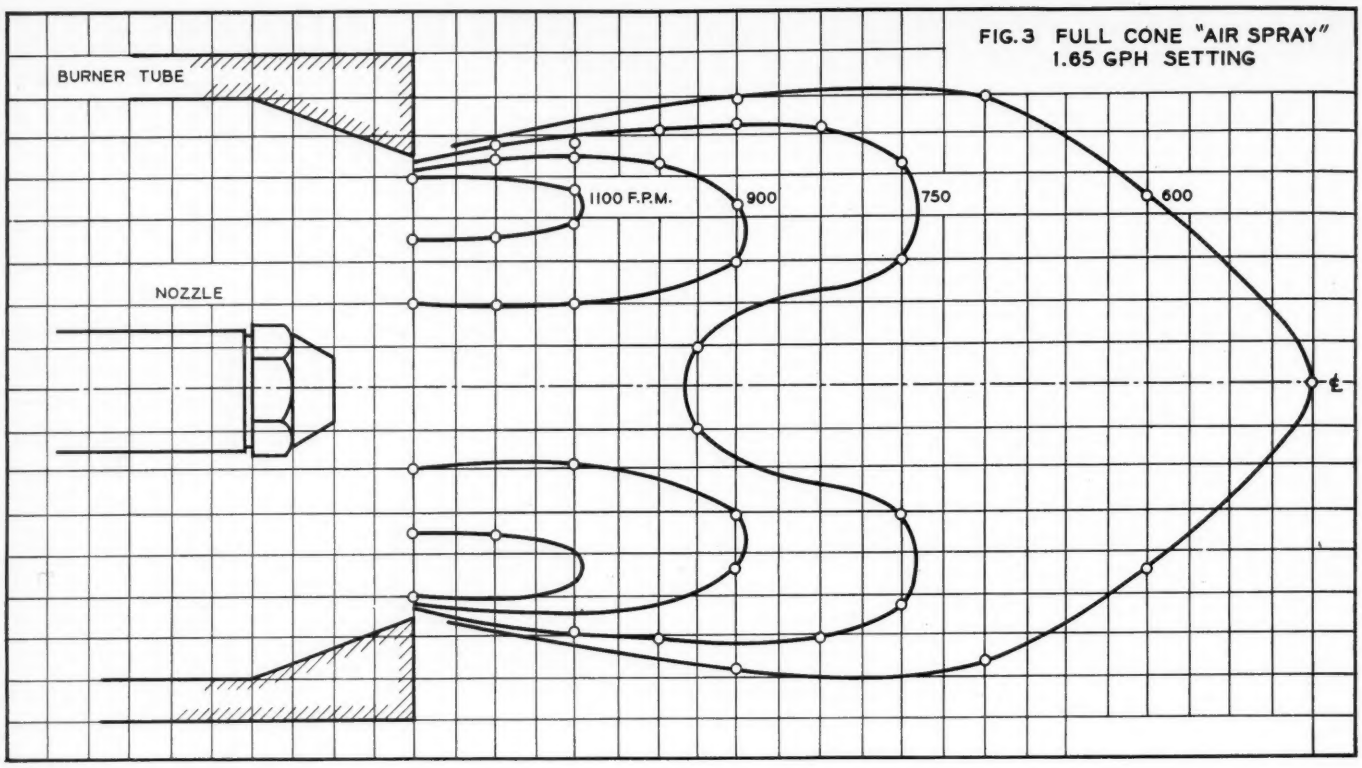


Fig. 3. *Scale: Each square equals 1/4".*

but it is best to adapt your stock to your service needs.

The same suggestions on which nozzles to stock apply to jobbers.

While on the subject of sprays, I might mention a question which I thought had been answered long ago but which keeps coming up. "Which way does the spray swirl?" It seems that a mere statement that "it doesn't" is not convincing enough. One serviceman responded to that by saying "But so-and-so tells in their literature which way their sprays swirl!" It is true that sales literature, advertisements and even reference books and patent drawings have shown sprays turning in a clockwise or counterclockwise direction. That conception is not correct because sprays just don't go that way. This could be proved by a lengthy discussion on how sprays are formed but if anyone needs proof, just attach a 5.00 GPH 80° nozzle to the water hose and observe the spray. Scratch the orifice lightly to make a streak in the spray and it will be seen that it does not go around but straight away from the nozzle. Flames which rotate do so because the burner air is guided in a circular path by the combustion chamber, after the burner gives it a start, and the air carries the oil spray with it in its swirl or rotation.

FHA Title I Operations Are Extended Four Months

A FOUR-MONTH extension of FHA Title I property improvement loan insurance operations and a similar extension of FHA authority to insure rental housing mortgages under Section 608 of the National Housing Act are provided for in legislation approved by the President October 25. The authorizations covering these two features of the FHA program were previously scheduled to expire on October 31. In addition to authorizing their continuance through February 1950, the new act increases by $25,000,000 the amount of the net insurance liability that may be outstanding at any one time as a result of Title I operations.

Standard Revised For Warm Air Units With Pot Burners

PRINTED COPIES of Warm-Air Furnaces Equipped With Vaporizing-Type Oil Burners, Commercial Standard CS104-49, Third Edition, now are available, according to an announcement by the Commodity Standards Division of the National Bureau of Standards. Copies are for sale by the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for ten cents each.

This revised commercial standard, originally proposed by the Federal Housing Administration, provides for a field test and the posting of an installation certificate; contains several other adjustments designed to bring the standard abreast of current practice; and provides a basis for certification of the quality and performance of warm-air furnaces equipped with vaporizing-type oilburners for the guidance of manufacturers, distributors, installers, contractors, and purchasers.

This standard applies to warm-air furnaces equipped with vaporizing-type oilburners arranged with either gravity or forced-air circulation. It does not include floor furnaces.

Rolland J. Hamilton, who has been in the employ of American-Standard and its predecessor, for almost forty-five years, retired on November 1 as vice president, American Radiator & Standard Sanitary Corp., Pittsburgh, Pa. His retirement was in accordance with the company's retirement plan, but he will continue to serve on the corporation's board of directors and executive committee.

Competitors Are Business Partners

Oilheating Dealers Profit Better Through OHI Cooperation

by
Hollis Albert*

BUSINESS MAKES STRANGE BED-FELLOWS, so we might as well be friendly with our competition. To the extent that we can keep a healthy climate in our industry, we can make a living, show a profit and have lots of fun, but if we should find it impossible to maintain healthy competition in oilheating, the pleasure is gone, failures are forced and a poor time is had by all.

This year the petroleum business celebrated its 90th birthday. The fanfare was mostly on gasoline, not on our product, but our day will come. Domestic fueloil has not been around for a third of the 90 years, yet some oil men predict that in a very few years it will be the major product in size. Gasoline has gotten over its growing pains, and from here out fueloil dealers will be in a progressively more favorable spot.

Gasoline has a remarkable distribution system making it available at nearly every crossroads in the nation, yet persons wanting gasoline have to go get it and they may go to any one of many stations. It doesn't lend itself to close customer relationships such as we have in fueloil.

Ours is an intimate business and our customers are very much dependent upon us, especially in bad weather when they most need the comfort that we can provide. The worse the weather, the more we are in demand and the more important it becomes that every phase of our industry function smoothly.

But as our trade has grown, as our services become more exacting and as competition for the home owner's dollar has become more acute, we find that just being a good manager and merchandiser isn't enough. We need the know-how beyond what we can learn in our own backyard if we are to keep abreast of the fast changing times.

Twenty-six years ago the oilburner manufacturers founded the Oil Heat Institute to exchange information with their competitors, knowing very well that in an important market the better the equipment of their competitors the easier it would be for them to sell their own wares. They banded together for this purpose.

"To promote in every lawful manner the common interests of the Oilheating Industry in designing, manufacturing and marketing oilburners and fueloil and to aid in meeting problems of safety and transportation and other industrial problems."

After a good number of years they realized that a Distribution Division was needed to better reach the industry at the retail level, and we have that today. A nucleus has ben built of progressive dealers under the OHI banner to pass on and share with competitors hard won knowledge so that the whole industry may enjoy better working conditions and good customer relations.

This thought was uppermost in the minds of the Baltimore dealers when they banded together as the Oil Heat Institute of Maryland.

Credit knowledge is exchanged. Association life insurance and hospitalization for our people is made available to the smallest operator so he and his employees can enjoy these benefits at minimum expense.

A vocational school for service men was started, open to all employees. The leading burner manufacturers of the country have been more than glad to demonstrate their products in the classroom. Some of the larger burner and oil companies donated equipment that has been invaluable. Their personnel, teaching specialized subjects have brought something that money couldn't buy.

Industry members have been very helpful in improving some legislation, getting working formulas for other regulations and in general sponsoring any measures for the general good.

Crises will arise in any business or industry, no matter how hard we try to prevent them. The 1947-48 oil shortage hit our city just when our new Institute chapter was getting under way. Some companies jockeyed for position. With the better cooperation of today and given the same amount of oil that we had then it is very doubtful that there would be enough trouble to reach the newspapers. As it was, OHI was very much on the job to help its dealers through this troublesome period.

When the buyers' market returned with 1948 the head office of OHI was quick to start to work for you. Its Public Relations Committee presented a rounded dealer program to help you sell oilheat on its proven merits . . . it's best because it's carefree, economical, clean. Then this committee is working out a formula to help you in the hiring of sales and service men, to eliminate the hunt and punch system of expanding personnel as sales volume rises.

When oilheating dealer representatives, through the Distribution Division, can meet, as they frequently do, with key men from these other groups the benefits to the whole oilheating industry are obvious. The dealer directors come from all over the country and represent you. One will be a big dealer from a large market, another a small dealer in a city, a country dealer, a small town dealer, and so on. Then they represent various kinds of marketing outlets—those selling to builders, the strictly oilburner men, the fueloil distributors, appliance dealers, department stores, major oil companies . . . anyone with a direct retail interest in oilheating.

This OHI is yours to use. It is not trying to police an industry, but rather to guide it to a stronger position year by year. It is a big undertaking and can work best if it has the support of every oilheating man who is interested in the industry's welfare and profits. Each additional membership, your membership, will make it that much more effective.

*President, Operators Heat, Inc., Baltimore, and secretary of the local dealers' chapter of the Oil-Heat Institute.

Two Types of Vertical Rotaries

Approach to Combustion Problem Different for Each Type

by

J. W. Schulz

ARE ALL BURNER designers copycats?

Answer that for yourself after you consider that today there are, in addition to a wide variety of industrial burners, fully seven types of automatic burners.

The automatic burners include (1) high pressure gun burners, (2) low pressure gun burners, (3) wall flame rotaries, (4) atomizing vertical rotaries, (5) horizontal rotary cup burners, (6) pot type vaporizing burners, and (7) the relatively new horizontal-flame vaporizing burners.

Each type burner differs from the others in important respects. A type generally has its outstanding strong points. For example, one type might be able to use heavier oils than are suitable for most of the others. Another type may be adaptable particularly well to electric ignition. Some types cost far less to manufacture than others. Some are inexpensive to develop, design, and test before production starts. Quietness of starting and running may be the outstanding advantage of a particular type, or ability to produce a dependable flame as small as is ever needed for house-heating. Efficiency counts; a particular type may be outstandingly efficient on actual installations for the good reason that it runs properly and dependably only when installed and adjusted for highly efficient operation. Of course, and in addition to all this, the development and design engineers of a particular manufacturer may produce a brilliant display of brains, patience, and thoroughness, and thus bring out a burner which is far ahead of other burners of the same type. This accentuates the advantages which are inherent in a particular type burner.

Locating a vertical spinning shaft in a boiler or furnace base or an ash pit had latent possibilities, sensed early in the history of American oilburners, which inspired the development of several different arrangements for driving the shaft. Widely different shaft speeds, from 1150 rpm to 10,000 rpm, were used in burners which were manufactured in considerable quantities. Horizontal-shaft motors were used in some of these burners, vertical-shaft motors in others. Some of the horizontal-shaft motors were located inside the furnaces or boilers, others were located outside. Offered to the public in many different forms from the start of domestic oilburner history, the vertical rotary burner has been recognized for many years as a distinctive type burner.

Wall Flame Distinctive

Especially distinctive, so much so that it now forms a burner type by itself, is the wall flame variety of vertical rotary burner. The flame this gives is widely different from the flames given by the other types of burners. A unique process is employed to produce this flame, and involved in this process are peculiarities of oil-handling, air-handling, and design of the stationary parts related to combustion, the parts which correspond to the fireboxes or combustion chambers of certain other burners.

The highly developed system for handling the oil from the time it reaches the oilburner provides for these separate operations:

1. Oil droplets of controlled size are produced by the oil distributor arrangement, located within or just under the blower wheel. The objective definitely is not to atomize the oil as finely as possible. This is brought out by a certain type of trouble encountered rarely on actual installations, which is not important except that it brings out the point that combustion difficulty results when by accident the oil is atomized more finely than the designers of the burner intend.

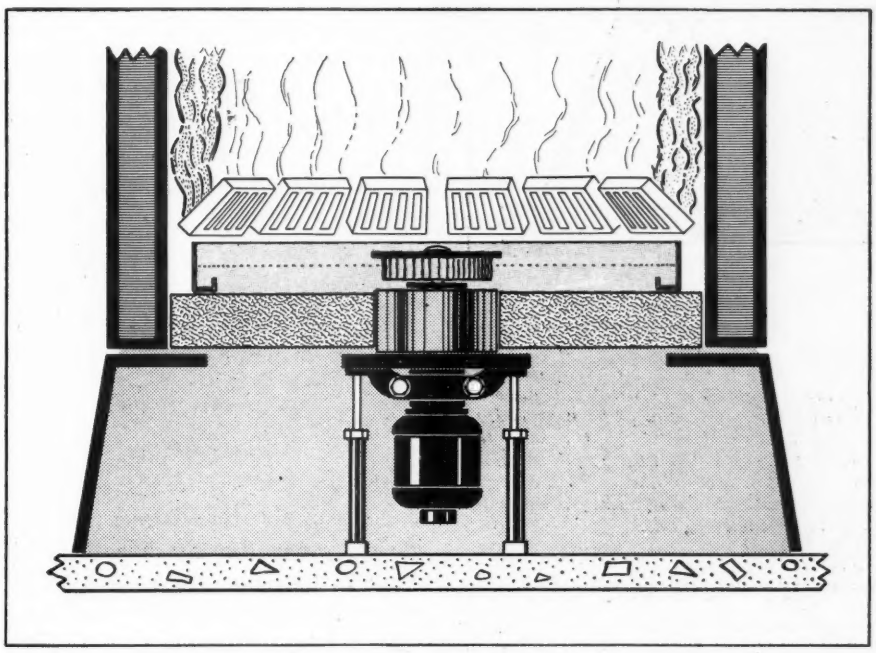
2. (See the dotted line in the drawing of the wall flame burner. This shows the path the oil droplets take from the distributor, in the blower of the drawing, to the flame rim or vaporizing rim.) The oil droplets are projected by centrifugal force to the vaporizing surface of the burner, termed the flame rim or vaporizing rim. Because they are of the proper size and travel at the proper velocity, the droplets (you can term them the atomized oil) do not become ignited as they travel this path to the vaporizing surface. If they were smaller, they might tend to burn in mid-air, which would be wrong for this type burner. That is why the controlled size of the particles is important. These additional factors are conducive to premature, mid-air igniting: higher surrounding air or gas temperature, greater amounts of radiant heat reaching the particles en route to the vaporizing surface, and reduced particle velocity. The point is that mid-air igniting of these particles does not occur; oddly, here is a burner type which atomizes the oil but does not burn the atomized oil in mid-air. Appreciation of the splendid, highly-developed system for distributing the oil properly on the vaporizing surface is bound to be the result of studying the oil-handling details of this type burner.

3. Converting the oil to burnable vapor or gas. This is done by increasing the temperature of the oil particles after they strike the vaporizing surface and while they are in contact with it. Proper sizing of the particles again is important; this time, they should not be of excessive size. Proper temperature of the vaporizing surface and proper play of radiant heat from the flame to this surface and the oil particles coming into contact with it also are highly important. Long years of careful development work have made the burner foolproof on these scores.

4. Combustion of the oil gas, or vaporized oil, under close but 100% practical control to produce the distinctive, efficient wall flame combustion. The nicely-designed metal grills, below the flame in the accompanying diagram, are a development of recent years. These grills are all-important in starting the combustion at the proper point, holding the flame front stable, and providing benefits of catalysis. The use of the grills

in recent years represents by itself an important advancement. Many such advancements, gained through years and years of concentrating on this type burner, are responsible for having brought the burner type to its present high level of performance.

Anyone who is an enthusiast for the wall flame burner, or who is even interested in glancing over its good features to understand better the part this type burner has played in bringing oil-heating up to its present-day high level, has to put stock in the characteristics of smooth starting and quiet combustion, ability to provide exceedingly small flames for water heaters and smallest house-heating furnaces and boilers, and high combustion efficiency.



Wall Flame *Vertical Rotary. Characterized by extreme refinement, smooth starting and running, high efficiencies, and ability to handle lightest heating loads, this type oilburner is interesting in addition because it is available in only a few makes which have been developed along lines of similar thinking. The flame is distinctive, widely different from the flames of other burners. It is produced not by burning atomized oil in mid-air, the principle employed by power burners of the atomizing type, but by employing a unique, highly-developed system for (1) production of controlled-size oil droplets, (2) distribution of these on a controlled-temperature surface, (3) converting the droplets to burnable oil vapor or gas, (4) combustion under close control which produces the high efficiencies and distinctive flame.*

The smooth starting is the inevitable result of a gradual build-up of the combustion rate when the burner starts. The motor starts spinning and no oil is being burned. After a few seconds, a tiny oil flame is started at each spark of the ignition system (today, lowest capacity burners of some models use one spark; larger burners use two). The ignition of the first oil to burn is so smooth that the lighting of a match is explosive in comparison. The burning rate increases gradually over a period of a few minutes until it reaches the gph rate for which the burner is adjusted. Thus there is all the smoothness of starting that comes of using the vaporizing method to prepare the oil for combustion. Similarly, use of the vaporizing method of preparing the oil for combustion gives, in this burner, a pleasing flame quietness during the normal operation of the burner. Closely controlled in every way, especially by the use of the lately-developed grills, the oil gas which in reality is fed to the flame burns smoothly and quietly.

The ability to produce exceedingly small flames, which has led to the production of low gph burners, oil-boilers, oil-furnaces, and water heaters all of the wall flame type, is important today in helping solve the problems of heating exceedingly small, well-insulated homes. Firing considerably less than half a gallon per hour is no problem for a wall flame burner designed for this; performance equals that of higher firing rate in every respect; there is no more trouble at low gph rates than at the higher rates which were more usual years ago.

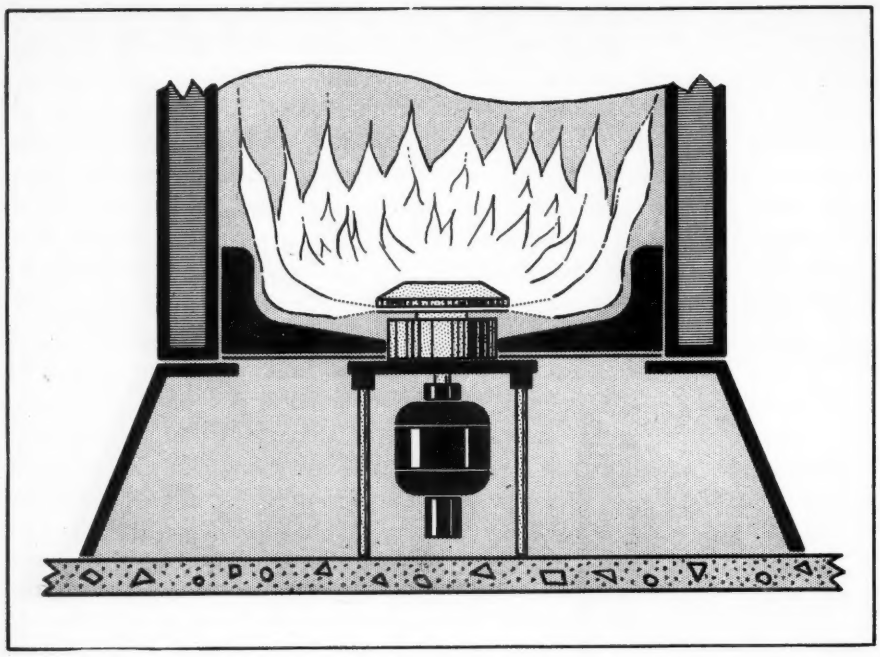
As these actually work out, in sum-total the efficiencies of wall flame installations, as they are found to be working in the field, are outstandingly high for a peculiar reason. This does not relate to any ability of the burner to produce CO_2 readings considerably higher than those produced by excellent burners of other types. It relates to the fact that a properly-adjusted wall flame burner gives a flame of a certain appearance and, luckily for owners of such burners, a flame of this certain appearance is efficient and does give a high CO_2 reading. For example, a burner might be operating and giving 11% CO_2 together with a good-looking flame. Open the burner's air damper or give the fire additional air in any other way, and the flame appearance deteriorates tremendously. At 9% CO_2, probably the flame would appear intolerable even to a service man only lightly schooled in this type burner. Not only does the shape of the fire change, but the color also changes. If you adjust for a good-looking flame, you simply get a good CO_2 reading. Any fault that lowers the efficiency and the CO_2 prevents obtaining a good-looking flame. There's precisely the same effect as if the burner had its own, built-in CO_2 indicator.

A burner expert well versed in all types of burners may prefer another type of burner to the wall flame type. Many experts do; assembling data on the good points and weaknesses of burners, they conclude that another type burner is their favorite. For most of their installations, it is their decision that another type serves best in overall.

There's just one point to be made here: Regardless of the excellence of the other types of burners, widely used for weighty reasons, the wall flame type has the interesting features which have been discussed, and many of these features deserve the admiration of the scholar who wants to know the good points of every type burner. This is not an attempt to evaluate types of burners. It is an effort to bring out the good points, and interesting characteristics, of the type burner being discussed.

The atomizing type vertical rotary oilburner is, unlike the wall flame burner, found in many widely different forms, as we go about servicing burners today.

The bowl-shaped hearth shown in the drawing of this type burner is charac-



Atomizing *Type Vertical Rotary. In contrast with the similar thinking among different manufacturers of wall flame rotary burners, the different makes of atomizing type vertical rotary burners are widely different in principle and construction. Only the flames are similar; all are the shape of an inverted umbrella. The rugged-individualist designers of this type burner have employed motor speeds as low as 1150 rpm, and as high as 10,000 rpm, have employed motors of both the vertical and horizontal types, have located the motors both inside and outside the ashpits, and have employed widely different methods in attempts to arrive at perfect systems of electric ignition. Many burners of this type, which are in use today, use gas ignition. Some have unusual atomizing ability that invites the use of oils heavier than the usual house-heating oils.*

teristic of it, for this burner atomizes the oil sufficiently well to burn it in mid-air. By definition, an atomizing burner turns to gas and burns oil particles or droplets while they travel in mid-air (the liquid oil being converted to a gas by increasing its temperature is not in contact with solid material). The atomizing vertical rotary burner produces a flame which is the shape of a sunflower or an inverted umbrella. Atomization is accomplished in many models by a vertical-shaft cup or plate that serves simultaneously to distribute the oil by centrifugal force. Whereas in wall flame burners all models have motor speeds of about 1500 to 1750 rpm (four-pole 60-cycle motors), widely different motor speeds have been used for atomizing vertical rotary burners, from 1150 rpm to 10,000 rpm.

The different makes and models of atomizing vertical rotaries are greatly different also with respect to other details of design and construction. Some have no built-in oil pumps, others have such pumps. Some obtain air for combustion mainly by natural draft, while others use blower wheels to provide forced-draft. Some use vertical motors and the direct-drive to the distributor (and fan if one is used) indicated in the accompanying drawing of this type burner; others use gear-drive and a horizontal-shaft motor located inside or outside the ash pit or furnace or boiler base. While a few installations today run better on relatively light domestic fuel-oil, there are models of this type of burner which have outstanding atomizing ability. We sometimes find these in garages using part crankcase drainings (contrary to all rules and regulations) and part domestic fueloil.

For most designers, fitting an atomizing vertical rotary burner with foolproof electric ignition has proved an insurmountable problem; consequently probably most of the burners of this type in use today use gas ignition. However, there is one outstanding proof that a burner of this type can work splendidly with electric jump-spark ignition; one manufacturer can point with justified pride to his thousands of electric ignition jobs working splendidly in the field right now. Incidentally, this brings back memories of the headaches suffered years ago by dealers and service men when efforts were made to start using electric ignition for wall flame burners. At that time it did not appear that the wall flame jobs were naturals for electric ignition; today, only jump-spark ignition is used for them, and ignition-failure troubles are not the big problem.

Although they both start out with a vertical shaft spinning in the base of the furnace or boiler, the two types of vertical rotary burners are widely different. They are so different that a review of the highlights of each leads to two completely different conclusions.

A study of the wall flame vertical rotary burner leads to the conclusion that this is a highly-developed, highly-refined oilburner, developed painstakingly and thoroughly and offered now by a few manufacturers who think much along the same lines. Every wall flame burner operates on the same principles to produce the same type of flame, unique to the type burner, greatly different from the flames of other burners.

A study of atomizing vertical rotary burners leads to the conclusion that a tremendous amount of ingenuity and creativeness has been displayed by the designers of this type burner. The designers have used many different roads to get to the same objective. It might appear that a designer in the oilheating industry who wants to make a mark for himself as a rugged individualist should start work developing an atomizing vertical rotary oilburner.

Residential Building Declines From September

OCTOBER residential building awards totaled $500,702,000, according to F. W. Dodge Corporation, statistical organization which gathers building figures for the 37 states east of the Rocky Mountains. This volume was down 5% from September but was up a phenomenal 69% over October of last year. Public awards accounted for 8% of last month's residential volume.

In the first ten months of this year private residential awards totaled $3,077,355,000 against $2,971,059,000 in the corresponding period of last year while public residential awards amounted to $307,745,000 against $116,177,000 in the first ten months of 1948. The overall gain in residential awards on a cumulative ten-month basis was 10% over the corresponding period of last year.

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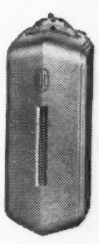

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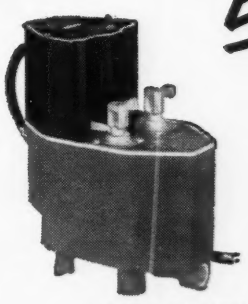

Detroit CRC-239-P and CRC-239-PF Add-On Controls—For operation of space heaters and floor furnaces.

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Economists Predict Small Business Adjustment In '50

FURTHER READJUSTMENT will characterize the nation's business between now and the middle of next year, with a moderate rise to follow during the latter part of next year.

This conclusion is drawn from an opinion survey made by F. W. Dodge Corporation this month among 108 economists in industrial and research organizations, and in universities. Highlights of the Dodge survey follow:

Insignificant change is to be expected in physical volume of production between now and the end of next year, with a reasonable expectation of moderate declines between now and mid-year 1950, and moderate rise in the last half of 1950.

Civilian employment will remain approximately stable or decline during the remainder of this year and the first half of next, and remain approximately stable in the last half of next year.

A general and moderate downward movement in the wholesale commodity price index is expected between now and the end of next year.

A preponderant opinion points to a definite downward movement in the wholesale price of farm products, a downward trend but not pronounced in metals and metal products, and a moderate downward trend in the wholesale prices of building materials as a group.

A generally progressive but moderate downward cost-of-living index through next year is anticipated.

Wages in industry will remain generally stable during the coming year, and the opinion is overwhelming that many industrial workers will receive benefits equivalent to wage increases during the year.

Total consumption expenditures will decline next year, perhaps in the range of 3% to 5% from this year's level.

Two thirds of the respondents expect the number of dwelling units to be built next year to be less than this year's volume.

SUPERSALESMAN

Front page *cartoon in color which appeared in all editions of* THE CHICAGO TRIBUNE *of November 3, 1949.*

U. S. Department of Labor Fueloil Prices (September)

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various suppliers in each market, the prices are averaged and published. Those in the table that follow were taken September 15 (cents per gallon):

	Range	*No. 1*	*No. 2*	*No. 3*
Boston	12.93	12.75	11.50	..
Manchester	13.80	13.30	12.40	..
Portland, Me.	12.78	12.78	11.64	..
[4] Buffalo	13.94	..	12.93	12.93
[1] New York	..	..	11.57	..
Philadelphia	..	11.75	11.22	..
[1] Chicago	12.88	12.45	11.66	11.61
[5] Detroit	..	13.90	12.88	..
Milwaukee	..	13.40	12.40	12.42
[1] Kansas City	..	12.24	11.19	11.32
Minneapolis	13.17	12.93	11.62	11.93
[1] Baltimore	..	12.04	11.45	..
[2] Wash., D. C.	..	12.51	12.04	..
Jacksonville	..	13.03	12.45	..
Norfolk	..	11.98	10.80	11.00
Richmond	..	12.50	11.22	..
[3] Savannah	..	13.70	12.60	..
[6] New Orleans	..	13.68	12.05	12.05
Portland, Ore.	..	13.84	11.64	6.55
[7] San Francisco	..	13.77	11.44	6.48
[5] Seattle	..	14.77	12.65	6.74

[1] Prices include 2 percent tax.
[2] Prices include 2 percent tax on all fuels except gas, effective August, 1, 1949.
[3] Inspection tax of one cent per gallon included on kerosene only.
[4] Prices include 1 percent tax.
[5] Prices include 3 percent tax.
[6] Prices include 3 percent tax on all fuels except gas; prices for kerosene and fuel-oil No. 1 also include one cent per gallon State health tax, and 1/32 of one cent per gallon State inspection tax.
[7] Prices include 3.5 percent tax on all fuels except gas, effective July 1, 1949.

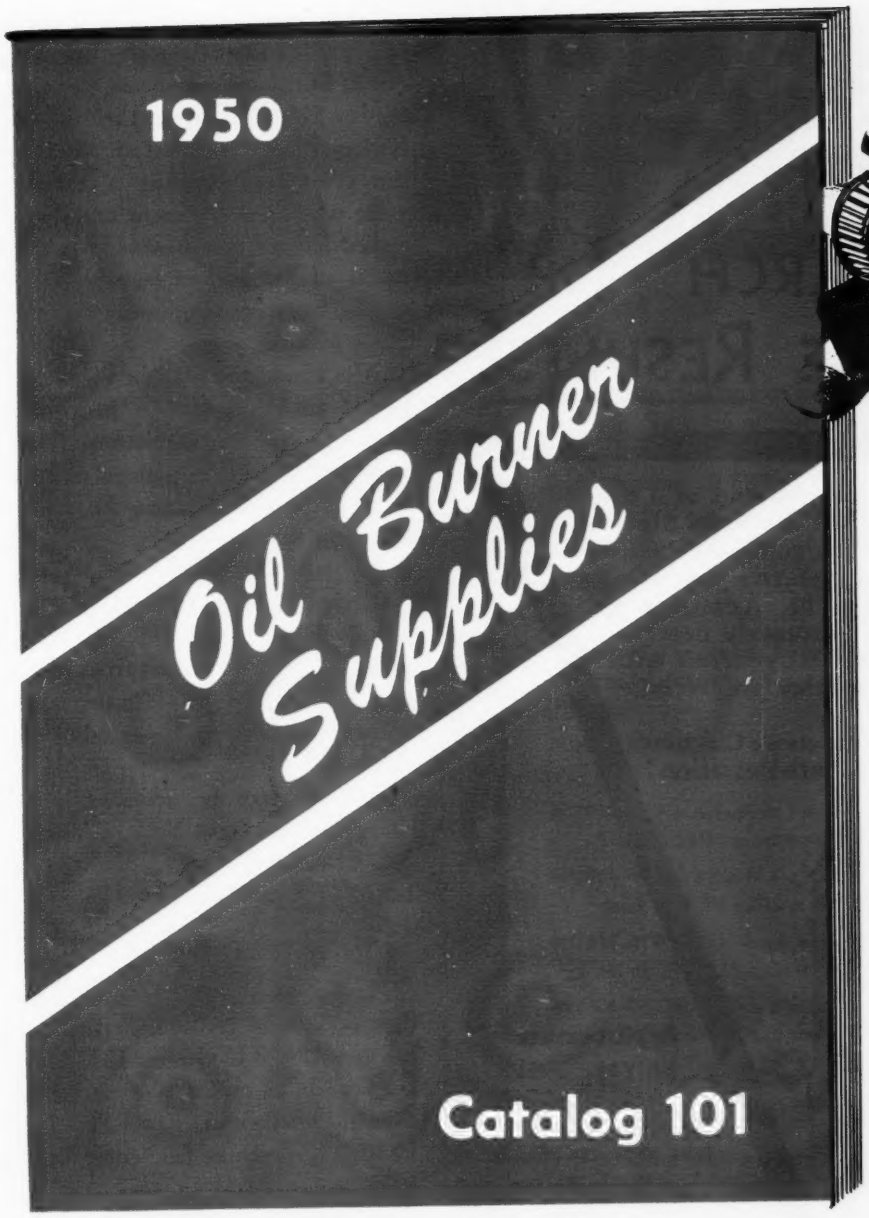
British American Plans New Canadian Refinery

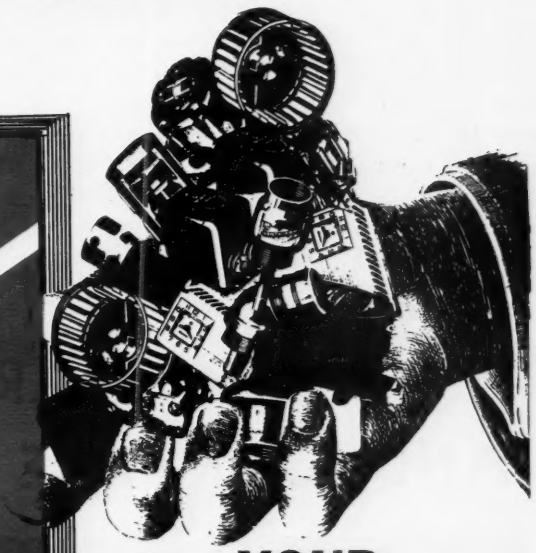
BRITISH AMERICAN Oil Company, Ltd., has announced plans to build an oil refinery at Edmonton, Alberta, which will have an initial capacity of 2,000,000 barrels a year. Announcement was made by M. S. Becinger, vice-president for manufacturing, through R. H. C. Harrison of Calgary, counsel for the company in Western Canada.

Construction will be started next spring, four miles east of Edmonton, on the North Saskatchewan River.

Imperial Oil, Ltd., now has the only refinery in Edmonton with a capacity of 21,000 barrels of oil daily, largest in Western Canada. McColl-Frontenac Oil Co., Ltd., has announced it will build a $10,000,000 refinery next spring.

Here's Profit!





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RICHMOND 20, VIRGINIA

NOTICE -- We do not solicit fuel unit repair business or the sale of fuel units or transformers in areas served by authorized Webster Electric and Approved Sunstrand Service Stations.

Massachusetts Oil Gains Shown For Last Season

FUEL USE for domestic heating in Massachusetts is shown in a report of the state's Department of Labor and Industries, for both the 1947-48 heating season and the 1948-49 season. Fuel use was down last year compared with the year before, but since domestic heating consumption follows closely the total heating load, it may be assumed that the warmer winter in 1948-49 accounted for the decrease in fuel used.

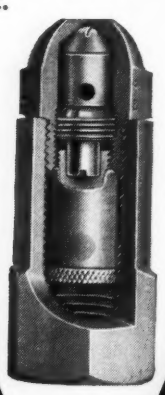
Weather in Boston last winter was 15.1% milder than for the 1947-48 winter, and this may be about the percent of decline that might have been expected if all fuels had held their respective places in the market. Light heating oils declined only 9.2% from 1,291,395,000 gallons in 1947-48 to 1,179,047,000 gallons in the last heating season. Residual oils for heating increased 3% to 661,953,000 gallons last year. Gas for residential heating was off only 1% to 8,275,714,000 cubic feet.

Anthracite coal was off 15.9%; bituminous coal off 14%; coke off 26.4% and briquettes were off 14.5% to 28,613 tons last winter in Massachusetts.

TAKE A MONARCH "TIP"-- AND COMPARE RESULTS!

Most any nozzle will produce some kind of a fire, but —until you have tried Monarch Stainless Steel Nozzles (of a type with spray characteristics matched to your air mixing equipment) you won't know how good they really can be. Advise make of burner and sketch or accurately describe air mixing head and make test *yourself* with the series Monarch Nozzles we recommend.

Pulsation: Write for new Circular No. 51849 on our "Anti-Pulsation" equipment.



F-80

The G-74 Combustion Head

The Monarch G-74 Head embodies an entirely new approach to efficient means for intimately mixing air with atomized oil to provide a highly efficient controlled flame.

Note these features:

1. Suitable for capacity sizes from .75 GPH to 2.50 GPH.
2. Simple to install and there is no "guess work" about the settings.
3. Price—Less than the cost of a good fuel unit.

Replacement Valves

Monarch G-49 piston type pressure regulating and cut-off valves are available in models to suit most replacement needs. They can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode. Rugged Brass bodies, with stainless steel pistons.

Write for Catalog D

MONARCH MFG. WORKS, INC.

2503 E. ONTARIO ST.

PHILADELPHIA 34 PENNA.

European Distributor: A. Coutau, Rue de la Scie No. 16, Geneva, Switzerland

NBFU Issues Revised Pamphlet No. 31

NATIONAL BOARD OF FIRE UNDERWRITERS has issued a revision of Pamphlet No. 31, Standards for the Installation of Oil Burning Equipments, dated September 1949. Regulations are not greatly changed in the revised edition, though the provision requiring a three-way valve when two basement tanks are installed has been eliminated. A total capacity of 550 gallons may be installed in the basement, but must be in two 275-gal. tanks.

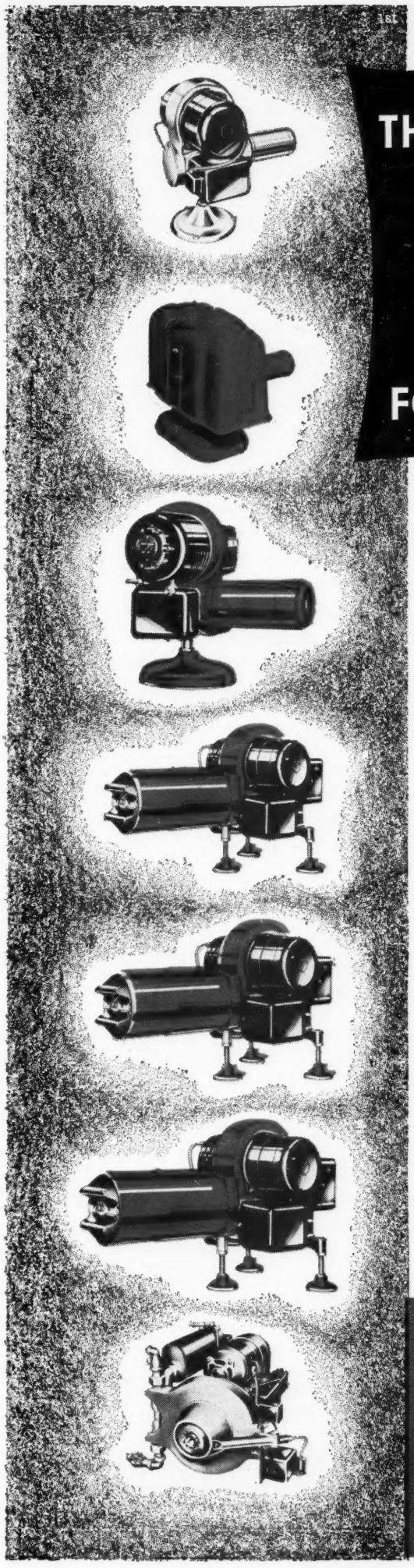
Also eliminated was the formerly required anti-syphon valve in a gravity feed line, but the regulations now require a low water cut-off on steam systems to prevent firing a steam boiler when the water is low.

The rule that formerly required that a fill box be located at least five feet from a building opening has been revised to allow fills at least two feet from an opening. Terminals of vent line also must be at least two feet from any building opening.

A copy may be obtained without charge at the New York, Chicago or San Francisco offices of the National Board of Fire Underwriters.

A. B. Meeg, formerly manager, industrial control division, Perfex Corp., has joined Bell & Gossett Co., Morton Grove, Ill., as manager of national accounts. Other experience includes service as Westinghouse field engineer from 1926 to 1929 and an association with Iron Fireman that began in 1930 and during which Mr. Meeg was connected with the Chicago Branch as mechanical superintendent, industrial salesman and manager, National Accounts Division.

James J. Kennedy has been promoted to retail manager, Shell Oil Company's Sacramento, Calif., division. For the past three years he has been adviser on sales and merchandising matters to the firm's sales promotion and advertising department in New York. The transfer was effective on November 1.



THERE'S A Gilbarco OIL BURNER FOR EVERY HEATING JOB

No need to pass up any kind of business when you handle the Gilbarco line. You've got a burner to fit every oil heating job. With six models of gun-type burners from ¾ to 25 gallons per hour, plus industrial burners from 15 to 110, you can sell a Gilbarco installation that will do the work and do it superlatively well — whether it's a speculative builder's development of four-room houses or a five-hundred-room hotel.

MODEL GBS — Low priced for the builder market, but a completely reliable, *famous-name* burner.

MODEL GCN — For the large volume home-owner market. A distinctive new model featuring top performance, greater accessibility and improved protection.

MODEL GC1 — For large homes and small commercial buildings which require from 2 to 4.25 gallons an hour.

MODEL GC3 — A burner for the extensive commercial field which uses from 5 to 10 gallons an hour.

MODEL GC4 — This is for the larger commercial and industrial jobs which need 9 to 14 gallons an hour.

MODEL GC5 — For large buildings and industrial installations firing No. 2 oil at 12 to 25 gallons an hour.

HEAVY OIL MODELS — Fully automatic, semi-automatic and manual models firing Nos. 4, 5 and 6 oils at 15 to 110 gallons an hour.

And remember, all GC models are equipped with the patented and exclusive Economy-Clutch action — still the most powerful sales feature in the gun-type burner field today!

Line up with a complete burner and unit line that opens up to you the *whole* field of oil heating. Several valuable dealer franchises are open west of the Appalachians. A letter, wire or phone call will bring you complete information — fast!

WARM AIR CONDITIONERS—SUSPENDED & SURFACE FURNACES—CAST IRON & STEEL BOILERS

Gilbarco

THE OIL BURNER WITH THE ECONOMY CLUTCH

GILBERT & BARKER MFG. COMPANY
WEST SPRINGFIELD, MASS., AND TORONTO, CANADA

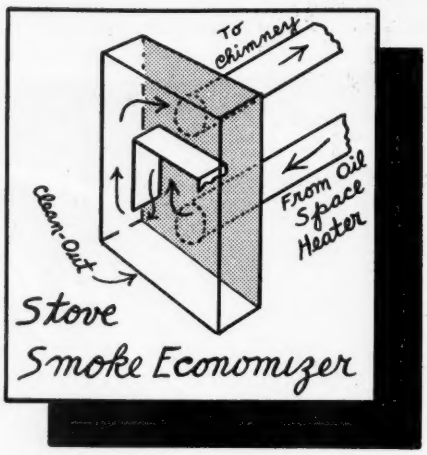
Everyday Snags

Space Heaters

The highly effective smokepipe economizers made for oil-fired boilers and furnaces serve two important functions. First, they reduce the stack temperature and slash the fuel consumption by giving the owners the benefit of "free heat." Second, they increase the outputs of the plants to which they are added, and give quicker heat pick-up on cold mornings.

Envious of what the smokepipe economizer does for a central heating plant, a specialist in oil-fired space heaters designed what he calls a "Stove Smoke Economizer" and succeeded in latching on to the same advantages for his lower-capacity heating units. Anyone can use the idea, which is shown in the accompanying sketch.

Using sheetmetal somewhat heavier than that used for small smokepipes, you can make the box about 20" wide, 20" high, and 5" to 8" deep. Gain a heat pocket or downdraft effect by providing the baffle shown cut-away in the sketch; this is the shape of an inverted "U." Make certain the box is absolutely air-



tight to prevent escape of products of combustion and soot, and provide a convenient clean-out door at the bottom.

Thinking over this amateurish design probably will arouse your interest in the excellent smokepipe economizers which have been saving untold amounts of oil in recent years. Wise dealers who worry about high stack temperatures know more than a little about the modern makes of smokepipe economizers.

* * *

Odd Steam Heating

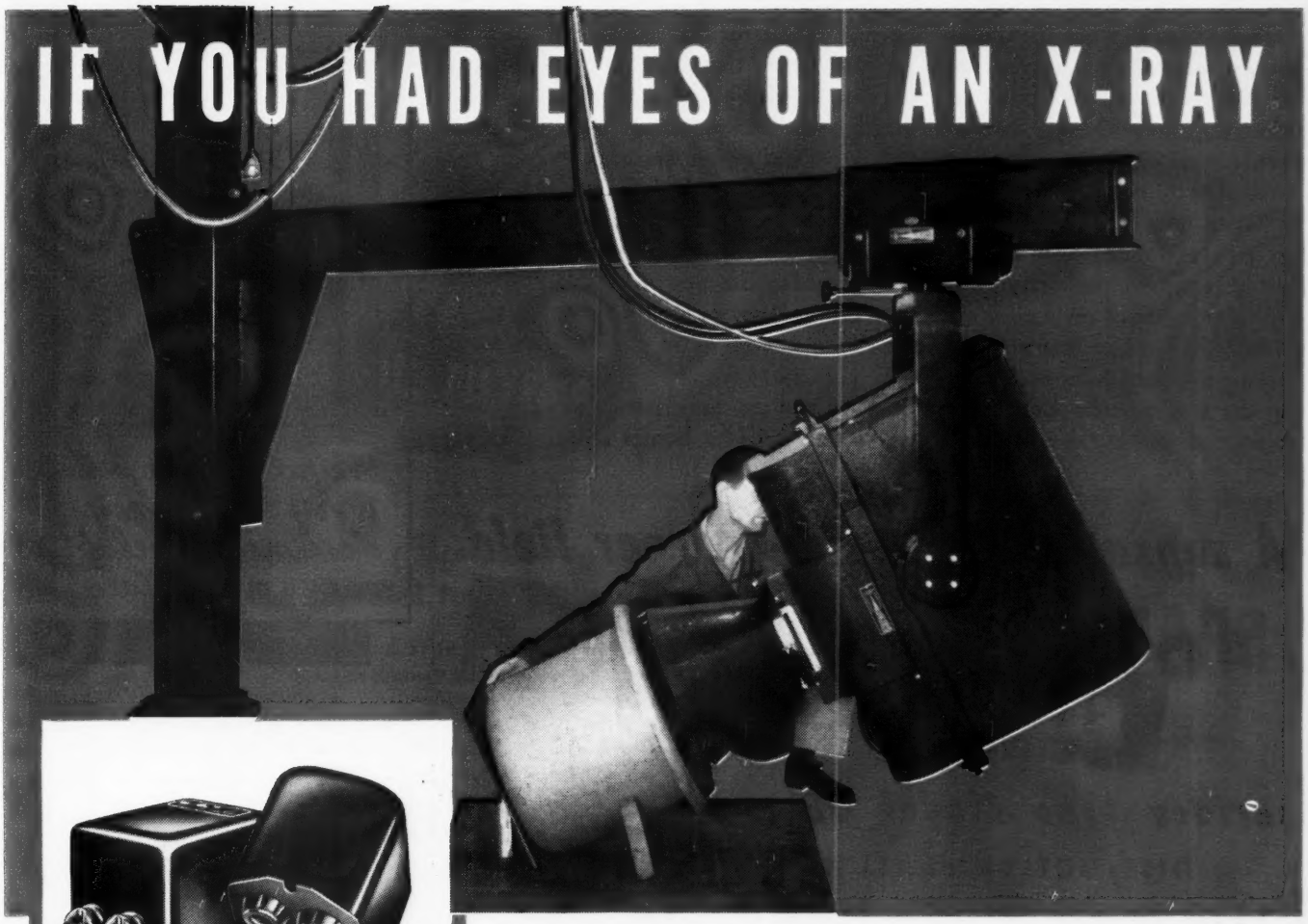
As a result of reading a "Short-Short" on unusual steam heating plants, which appeared on p. 80 of the October issue of FUELOIL & OIL HEAT, a heating engineer relates how he has been both amused and exasperated by the manner in which the "weird piping" of certain old steam plants is explained by many heating contractors, plumbers, and service men.

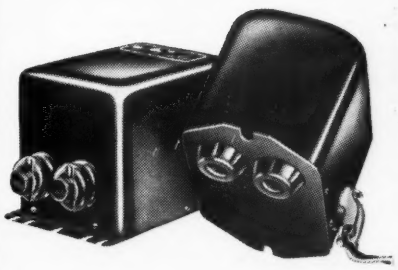
"Take for example the cockeyed piping I show in my sketch," he says. "Old-timers know the wrinkle. It consists of running an air vent line from a two-pipe steam heating plant to a chimney flue, and maybe running the pipe some distance up the flue.

"Originally this wrinkle was used to pipe to the chimney small or large amounts of steam that escaped inadvertently from the system at times. It would not do to vent a burst of steam into the boiler room, so the designer of an old system arranged for the burst of steam to go up the stack. The steam blast occurred, incidentally, when excessive steam pressure was developed in a so-called vapor system supposed to operate at a maximum of only a few ounces of

The Customer Always Returns
General
FUEL OIL FILTER
DE LUXE MODEL
2A-300
Model 2A-300 for exceptionally dirty tanks and large furnaces and boilers. .9-1/16" high; 5-1/2" diameter; 3/8" pipe openings.
General
FUEL OIL FILTER
STANDARD MODEL
1A-25
Model 1A-25 for space heaters, hot water heaters and small furnaces. 4-3/4" high; 3-1/2" diameter. Same style but with double capacity available as Model 2A-700.
FOR YOUR PASSENGER CAR OR TRUCK
General Filters are now available for your car or truck. Cartridges changed in one minute without tools. Complete kits include brackets for either engine or dash mounting. Put one on your car and truck. Regular dealer discounts.
You can be sure of repeaters when you sell a General Filter because the customer is always pleased with his money saving investment. So pleased, that it is natural for him to return year after year for a new cartridge. And your profit doesn't stop at the initial sale; it goes on and on with only a minimum of service from you.
A General Filter on every fuel oil burning installation is a good deal for both you and your customer — you make a nice profit on every sale and your customer is saved annoyance and expense from clogged burners.
MORE THAN 1600 JOBBERS TO SERVE YOU
GENERAL FILTERS INCORPORATED
GENERAL FUEL OIL FILTER
12890 WESTWOOD AVE. DETROIT 23, MICHIGAN
CANADIAN FACTORY BRANCH CANADIAN GENERAL FILTERS, LTD., 173 STRACHAN AVE., TORONTO 3, ONTARIO

IF YOU HAD EYES OF AN X-RAY





Working with the oil burner industry from the earliest days, Jefferson engineers developed the mid-point grounded and balanced design which equalized voltage stresses in the electrode system as well as reducing maintenance and insuring performance dependability. This, with other advancements such as the radio interference barrier, aided in securing the approval of automatic oil burner electric ignition by Underwriters' Laboratories as applied to the average oil burner.

Listed by Underwriters' Laboratories

YOU WOULD SEE WHY JEFFERSON TRANSFORMERS PROVIDE BETTER PERFORMANCE LONGER!

● It's what's inside the case that counts. There are, of course, no moving parts, no revolving members in a transformer. BUT there is nevertheless a vital need for the most accurate proportioning, selected high quality materials, exacting workmanship and top-flight engineering. All these are characteristics hidden by the enclosing case. When you specify Jefferson Transformers you can be sure they are all "present and accounted for".

JEFFERSON ELECTRIC COMPANY
Bellwood, Illinois
In Canada: **Canadian Jefferson Electric Co., Ltd., 384 Pape Ave., Toronto, Ont.**

JEFFERSON ELECTRIC TRANSFORMERS

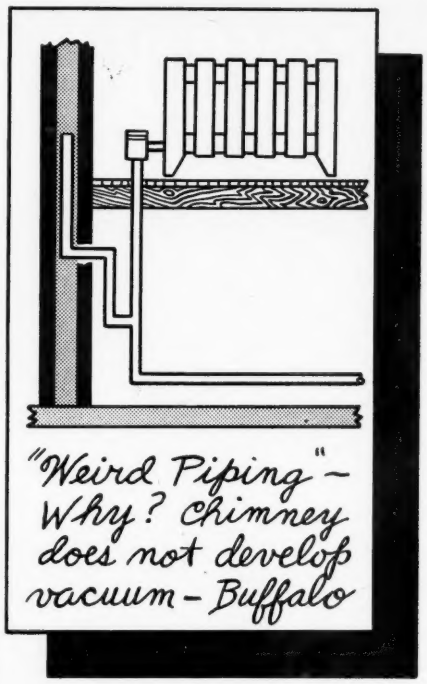
pressure. Again, when the traps or specialties were adjusted improperly or got in poor condition and did not function effectively, a trickle or cloud of steam would wind up in the chimney flue instead of in the boiler room.

"Then once in a while a handyman or poorly-educated maintenance man would remember the idea and use it to rid a dry return of air-binding or steam-locking. As a lazy man's way out of leaking trap trouble, he could vent steam up the flue, whereas he could not let steam pour out in the basement.

"The error that amuses me relates to the notion that a chimney flue can put an appreciable vacuum on part of the system, drawing the air out of the radiators and piping, and thus speeding the heating of a cold, air-filled system.

"After all, excellent chimney draft may be able to lift water a fifth of an inch. But the type of vacuum pump we use to develop a vacuum in a modern, vacuum-type steam plant can lift water perhaps 25 ft.

"You can understand from this why I laughed at a burner service man recently when he told me he had speeded the heating of certain radiators in his home by using a chimney flue to pull a vacuum on the radiators which had been slow to heat."



* * *

Chimneys Give Heat

An inside chimney gives a house appreciable heat. One combustion engineer who tests lots of burners always points this out to home owners.

He says, "Of course, the burner and furnace cannot take the credit for this, but because you have an inside chimney you receive for-free a lot of heat that would be wasted with an outside chimney, and your oil bills are lower."

The way he takes it into account is to deduct 50° for a one-story house, and 100° for a two-story house, from his observed stack temperature reading. In a two-story house with an inside chimney, he counts an observed stack temperature reading at 700°, for example, as in effect a reading of 600°.

To check on his amount of correction, holes were drilled at the top floor ceiling level of several inside chimneys, and stack thermometer readings taken there were compared with regular stack temperature readings. It turned out that though the results are considerably different in different homes, depending on variables involved, by and large he is not far wrong in thumb-ruling the economizer effect of an inside chimney.

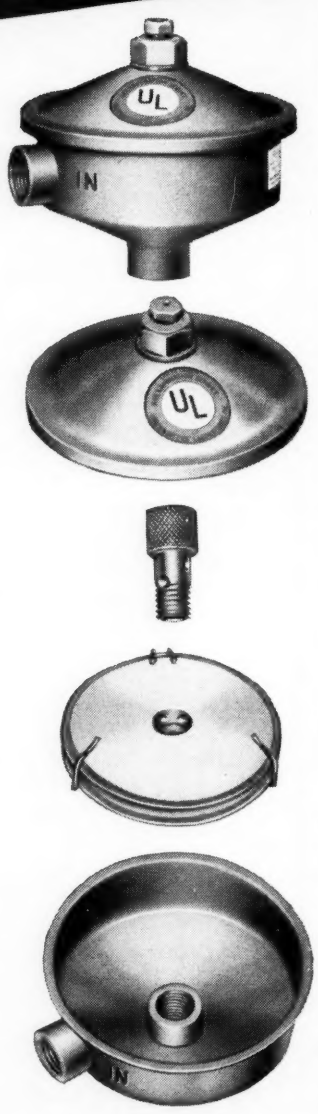
A sensation in the oil burner field

SPARKLER FUEL OIL FILTER...

surface type Model OB

DISTINCTIVE FEATURES

1. **A quality filter that will continue to operate under adverse conditions. No sudden stoppage of burner that necessitates night service calls.**
2. **Lint free filtering element is rayon filter paper that positively eliminates the possibility of lint clogging nozzle screens.**
3. **Large filtering area in a minimum space. More filtering surface is provided in a smaller space than possible with deep type filter. One set of filter elements will last an entire season in the average home installation.**



Surface type filtration as used in the Sparkler Model OB fuel oil filter has been used for many years in industrial filters for the removal of fine microscopic particles of residue. Sparkler surface type filters are used in processing petroleum products such as lubricating oils, heavy diesel oil and other oil stocks.

Now for the first time a fine grained surface type filter is available to the fuel oil trade. A filter that will remove all dirt and deposits found in storage tanks and at the same time eliminate the danger of sluffed off fibre particles clogging screens and causing sudden stoppage of burner.

Write today for special information about service dealer franchise

SPARKLER MANUFACTURING CO. 200 Lake Street, Mundelein, Ill.

Only... Klemm FUEL OIL FILTERS

are equipped with *Chemistone* the original Controlled Porosity Element

. . and only Klemm Filters offer "visible filtering." Your customers see the results—*the dirt, sediment and other foreign matter trapped by a Klemm Filter.* That's why Klemm units are so easy to sell and service. *Results are positive!* All your customers need this fuel protection. Make it a rule to suggest a Klemm Fuel Oil Filter on every call. YOU PROFIT ON EACH SALE . . . YOUR CUSTOMERS GET GREATER HEATING COMFORT.

HERE'S WHY KLEMM CHEMISTONE FILTERS SELL FASTER

MODEL FF 430G

Streamlined . . . lots of eye appeal—a carefully designed filter that looks right with the finest installation.

Engineered . . . Scientifically engineered to give 100% filtration under all conditions. Easy to clean—no tools or wrenches needed. Built to stand.

Packaged Right . . . Put up in dealer cartons of 12 each or assorted. Stocks easily . . . ships safely.

Priced Right . . . Superior in action, it's priced for quick sales. You'll find it doubly profitable to push Klemm filters.

NOW A CHOICE

MODELS FF 430G, FF 401G with glass bowls

MODELS FF 430*, 401*, with metal bowls

*Listed for reinspection with Underwriters Laboratories

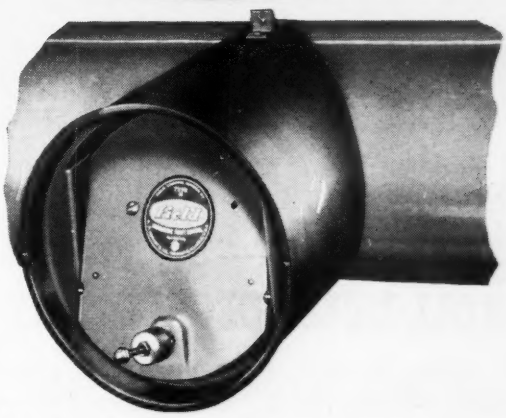
Klemm
AUTOMOTIVE PRODUCTS COMPANY

1718 Damen Avenue **Chicago 47, Illinois**
Export Division: Guiterman Co., Inc., 35 S. Williams Street, New York 4, N. Y.

Waterbury · Cleveland Toridheel · Florence Ranges and Heaters · Monogram · Glenwood · Hart Oil Heat

ON THE *Finest* HEATING EQUIPMENT

field CONTROLS THE DRAFT



field CONTROLS BRING OUT THE FINEST IN EVERY HEATING PLANT

Today, Field Controls are first choice with manufacturers of oil-fired heating equipment. And this preference is based in every case on the manufacturer's own rigid and exhaustive tests. Each test has proven that Field is the most accurate, most dependable, most "saleable" draft control made. The reason is Field's famous, patented design features: *"Rocking Chair"* gate and pivot action, to reduce friction, increase sensitivity; *Off Center Gate Mounting* which provides a larger effective area for draft action; *Side Wings* for closer air volume control; *Extended Housing* which places the gate outside the reach of fouling, warping soot and heat. Only Field has all these features, and only Field enjoys unqualified acceptance by manufacturers, dealers and consumers.

WRITE for full details on the complete Field Barometric Draft Control line—for greater fuel economy, longer heating plant life, greater customer satisfaction.

FIELD CONTROL DIVISION
H. D. CONKEY & COMPANY MENDOTA, ILLINOIS

AFFILIATES: CONCO MATERIALS HANDLING DIVISION CRANES—HOISTS

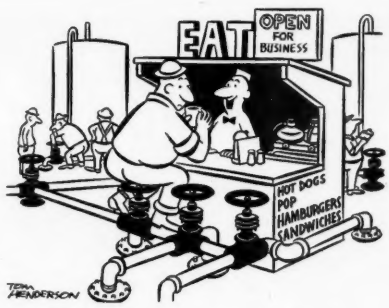
field REGISTERED

AFFILIATES: CONCO BUILDING PRODUCTS, INC. BRICK—TILE—STONE

BAROMETRIC DRAFT CONTROLS

F. R. Fletcher has been appointed to the Chicago district office, Penn Electric Switch Co., Goshen, Ind., replacing L. D. Linehan. Before joining Penn, Mr. Fletcher was a sales engineer for White-Rodgers Co. and has covered the Chicago district territory for the past two-and-a-half years. He is an experienced sales engineer and received his education at U.C.L.A. and Purdue engineering schools.

L. F. Craig, previously an assistant general manager of fueloil sales, has become general sales manager of special products, Gulf Oil Corp., Pittsburgh, Pa. Other changes in a reorganization of the company's domestic sales department saw M. J. St. Clair, in fueloil sales activities since 1933, named administrative assistant to R. M. Bartlett, Gulf's vice president of general sales, in the conduct of the general sales program.



"Suddenly I saw a chance to go into business for myself without investing a lotta money!"

Also, R. B. James, formerly an assistant in the Boston fueloil department; John Pennywitt, formerly assistant division manager in charge of fueloil sales, New York Div. and J. A. Guyton, formerly assistant division manager in charge of fueloil sales, Atlanta Div. were named regional managers at Boston, New York and Jacksonville, Fla., respectively. B. B. Bloys, formerly assistant to Mr. Pennywitt, will work with him as assistant regional manager.

G. K. Iwashita, recently named manager of product planning, General Electric Company's Air Conditioning Department, Bloomfield, N. J., will be responsible for coordination of product planning, including establishment of product lines and prices. Prior to his appointment he was manager of product research, Seeger Sunbeam Corp., Evansville, Ind. During the War he served as a major in the Intelligence Service.

W. L. Mellon, a founder of Gulf Oil Corp., and its active head for forty-five years, died at his home in Pittsburgh on October 8 after a brief illness. He was 81 years old. On May 26, 1948 Mr. Mellon retired as chairman of the board, but continued to serve as a director. His early experience in the oil business commenced in 1889 when he began drilling wells in western Pennsylvania and shipping crude oil to market in tank cars. Difficulties attending this means of transportation encouraged Mr. Mellon to build a pipeline to the Atlantic Seaboard. These interests he soon sold, but in 1901 he re-entered the petroleum business, and shortly after the Gulf Oil Corp. was organized. He was elected a director and vice president; president in 1909 and chairman of the board and chairman of the executive committee in 1931. Mr. Mellon is survived by two sons and two daughters.

SCHEDULING AUTOMATIC FUEL OIL DELIVERIES---- SIMPLIFIED WITH THE

ROLL-RULE DEGREE DAY CALCULATOR

The Roll-Rule accurately computes "K" factors and schedules Degree Day Deliveries in a fraction of the time required by any other method.

It has been designed especially to meet *YOUR* requirements and to save you time during your peak load season.

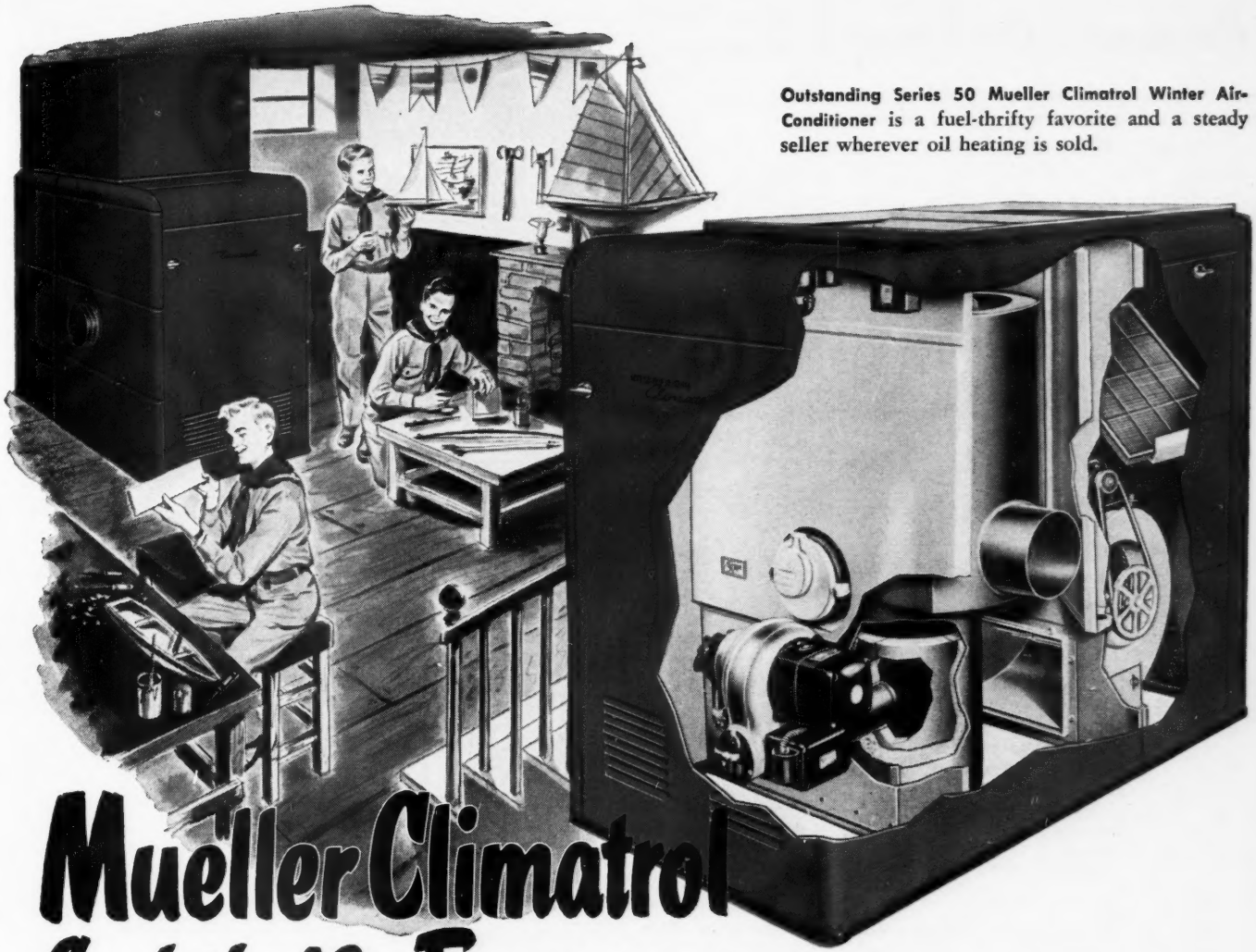
CALCULATES AUTOMATICALLY
Quickly gives "degree day" mark ahead
Largely eliminates chances of error
Easily operated—No experience required
Proven sturdy and dependable
Portable and convenient

SAVINGS THROUGH USE OF
ROLL-RULE DEGREE DAY CALCULATOR
Can readily pay for its cost by the greatly reduced clerical work required

Thirty-Five ($35.00) Delivered Parcel Post C.O.D. or Payment in advance to

CALCULATOR DIVISION

RUE MANUFACTURING COMPANY
1435 MELON STREET
PHILADELPHIA, 30, PA.



Outstanding Series 50 Mueller Climatrol Winter Air-Conditioner is a fuel-thrifty favorite and a steady seller wherever oil heating is sold.

Mueller Climatrol *fuel-thrifty* Furnaces build your sales with their "low-cost comfort" appeal

There are many selling points — points of superiority —in every oil-fired furnace in the Mueller Climatrol line. But when you come right down to it, *fuel economy* is the most important point to most of your prospects. That's the appeal to talk about. It brings you the most sales.

Mueller Climatrol fuel economy is hard to beat. You know that. You don't have to take a back seat with this line. More than 92 years of Mueller experience has given you a line that is engineered to give the *most* comfort for every gallon of fuel burned.

Emphasize fuel economy, no matter what feature of Mueller Climatrol design you're talking about — from the long-life heat-exchangers and efficient burners to quiet blowers and handsomely designed cabinets.

The more you tell about *fuel-thrifty* Mueller Climatrol Furnaces — the more profitable sales you write up. Send for complete information on the Series 50 and other units in the complete Mueller Climatrol line of oil-fired heating equipment . . . *L. J. Mueller Furnace Company, 2009 W. Oklahoma Avenue, Milwaukee 15, Wisconsin.*

MUELLER Climatrol

REG. U.S. PAT. OFF.

F-44

Reader's Problems

Q. Dear Mr. A., I have a problem. We have a hot water boiler fired by a stoker which is zoned so that there is one circulator and thermostat for downstairs, and one circulator and thermostat for upstairs. Now the owner wants a conversion oilburner.

My first thought is that it's necessary only to take out the stoker and put in a burner. But we have been informed that a clock of some kind is necessary so that the wiring from the two thermostats will go through this clock. However we are of the opinion that a relay is meant, not a clock. Not being up to these big cities' zone systems, I kind of figure that somewhere in your studies you have come across this same idea, and hope that you can tell us just what to do.

M.K.O.B., Berlin, N. H.

A. If you want to use the simplest rig, the problem calls for no worrying. The two circulators already are wired to be started and stopped by two thermostats; leave them just that way. Simply install the burner and provide on the boiler two hot water temperature controls. One will start and stop the burner regularly, and the other is for safety in case the first control fails and sticks "on." You could wire one control in the thermostat circuit of the burner panel, using low-voltage wiring, and wire the other (which you would set about 10° higher than the first) in the 110-volt live leg to the burner stack control panel. Or, and we prefer this, you could put a jumper on the thermostat circuit terminals of the burner panel and wire two 110-volt boiler temperature controls in series in the 110-volt live leg to the burner control panel. Set one control 10° lower than the other, then, so make it the "operating" control. The other probably never will stop the burner. It stays in reserve for safety in case the first control "fails unsafe" or sticks in later years in its "on" position.

If the installation provides summer-winter hot water, probably all you have to do is set one of the boiler temperature controls at about 160° and the other at 170° or 180° and forget the installation. The boiler will be kept hot to produce domestic hot water through indirect heater coils. When either circulator starts because a zone needs heat, the proper radiators will be heated.

If the installation does not provide summer-winter hot water and you use this simplest rig, then you may want to tell the owner to set the "operating" boiler temperature control low, say at 120°, for mildly cold months, about 145° for somewhat colder months, and up to 160° or even higher for the coldest weather. He'll save fuel doing that, especially if the boiler is not well insulated.

If the job does not provide summer-winter hot water, or if it has a hot water storage tank you want to equip with a tank temperature control to keep the heating boiler cool in summer when the hot water tank is hot enough, you can if you desire provide fancy controls at some extra cost and achieve maximum fuel economy. Install two special relays for the circulators, each relay having two sets of contacts which close when the room thermostat (which you will wire properly to the particular relay) closes its circuit. Wire the job so that when one circulator relay closes (a)

The Bethlehem DYNATHERM

keeps you ahead of competition!

1. The Bethlehem Dynatherm employs an entirely new principle of oil burning —the "whirling flame" for maximum efficiency and economy. The Dynatherm is designed about this flame.

2. Design and construction as an integral unit results in low-cost operation, ease of installation and servicing, and greater heating efficiency.

3. Back of every Bethlehem Dynatherm is 118 years of knowledge, engineering, experience and responsibility.

• FREE literature and newspaper mats available to all Dynatherm dealers.

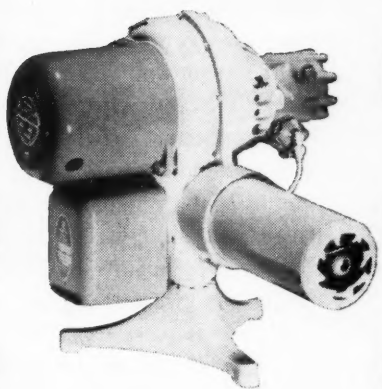
A few exclusive Bethlehem Dynatherm territory Franchises are still available
Wire or write immediately for full information.

BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA

Each Nu-Way OIL BURNER

FACTORY TESTED 8 WAYS

1 MOTOR
2 TRANS-FORMER
3 PUMP
4 BURNER ASSEMBLY
5 IGNITION
6 NOISE
7 OIL PRESSURE
8 AIR CONTROL



TO ASSURE EFFICIENT OPERATION RIGHT FROM THE START!

There's nothing more pleasant than the completion of the sale of a profitable oil burner installation. And it's an easier job when the installation is a Nu-Way. Each Nu-Way is factory tested before it leaves the plant to be sure it will operate at top efficiency right from the start. Installation problems and service calls are cut to a minimum . . . and, best of all, the customer is a "Satisfied Customer." Nu-Way Oil Burners are backed by a regular schedule of advertising in national magazines plus plenty of local sales helps. Take advantage of Nu-Way's 27 years of experience in the oil heating field. Standardize on the Nu-Way line for profit. WRITE TODAY for new folder containing facts about Nu-Way!

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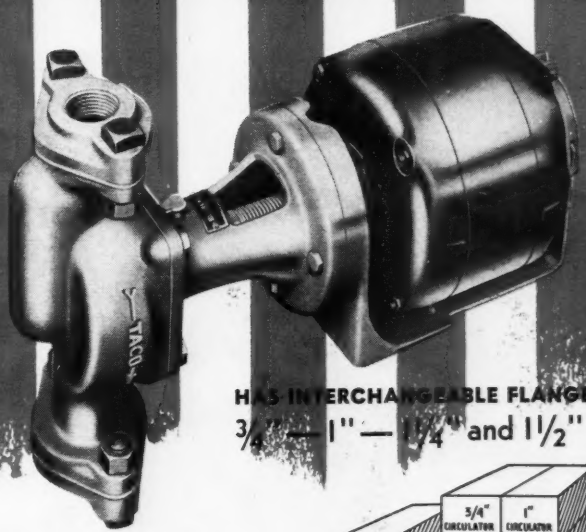
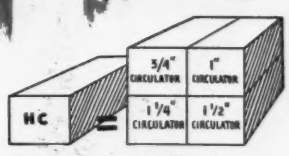
THE Nu-Way CORPORATION
ROCK ISLAND, ILLINOIS

Sold Through Jobbers and Distributors
Also Special Applications for Furnace and Boiler Manufacturers
"Automatic Oil Heat Exclusively Since 1921"

MORE GALLONS PER DOLLAR
(5 G.P.M. against a 7½ foot head)
WITH TACO'S NEW HORIZONTAL CIRCULATOR

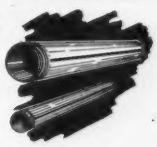


HAS INTERCHANGEABLE FLANGES
¾" — 1" — 1¼" and 1½"



CUTS INVENTORIES
Reduces 'em by ¾

CUTS TOTAL JOB COSTS
Uses smaller pipe sizes



More and more contractors are finding Taco's new horizontal circulator a real money saver for them. They get more gallons per minute per dollar of circulator because of the HC's higher capacity.

1½" CAPACITY SUPPLIED IN ALL SIZES

No matter whether you order the HC horizontal Taco with ¾", 1", 1¼" or 1½" flanges, you get the full capacity of an 1½" circulator. It's nice to have that extra capacity on the smaller job . . . just in case you need it.

"Better Heating-Better with Taco"

TACO HEATERS, Incorporated
137 South St., Providence 3, R. I.

one set of contacts in the relay starts the proper circulator, and (b) the other set of contacts in the relay starts the oilburner. The "b" set of contacts of both circulator relays will be in parallel with each other, in either the low-voltage thermostat circuit of the burner panel or in the 110-volt live leg to the burner control panel. If no summer-winter hot water is provided, then, the snapping-in of either relay starts (a) the proper circulator, and (b) the oilburner. But, and here's where the exceptional fuel economy comes in, the burner will stay idle and the heating boiler will become cool when neither of the room thermostats indicates heat is needed.

If the job has a hot water tank connected to the boiler by an indirect water heater, provide a temperature control, set at about 120° or 140°, on the hot water tank; wire it so that when the tank cools in summer it can start the burner. This tank temperature control will be in parallel with the "b" set of contacts of the circulator relays so that by closing its circuit it can start the burner when both the circulator relays, staying "off," are tending to keep the burner idle. You'll have to provide also, of course, a high limit control, which will be a boiler temperature control set at perhaps 180° and wired in the live leg to the burner control panel. This prevents boiler overheating under any conditions.

Don't use this special wiring, aimed to permit the boiler to cool when no heat or hot water is needed, if the job has a tankless water heater.

* * *

Q. We are planning to heat a four-room garage and service station using an oil boiler, a 2½" circulator for forced hot water, and unit heaters for 47,700, 38,500, 66,800, and 288,000 Btu.

The boiler will provide running hot water on rare occasions. We have not yet decided whether or not to use a hot water storage tank. We want to know about wiring and controls to start the burner but not the circulating pump when hot water is needed.

After reading J. W. Schulz's article on unit heater economy in the February issue of FUELOIL & OIL HEAT, *we decided to wire in such a manner that the burner and circulating pump start only when one or more unit heaters call for heat. Our electrician, however, believes that under certain conditions the boiler high limit temperature may be reached without the temperature in a particular room being reached, thus closing down the burner and circulator. Therefore he thinks the burner and the circulator should be wired separately. I question that this condition would arise but would like your opinion. We plan to use Minneapolis-Honeywell controls and would like a suggested wiring and control plan.*

There is a split tee (2½") at the boiler furnishing hot water to heaters in Rooms 1, 2, and 3 on one side and to Room 4 (288,000 Btu) from the other side of the tee. The 2½" circulator is on the return side, pumping from the two return lines. Do you think there is any appreciable loss in efficiency by having only one pump?

The boiler is insulated, but since it and all lines are inside rooms to be heated, the pipe lines distributing hot water to the unit heaters are not insulated. Do you recommend insulation?

S.O.F., Benld, Ill.

A. First, your electrician is wrong in thinking that following the principles of

FYRITE
Combustion Testing
UTILITY KIT

Pacemaker For Profits from Expert Heating Service

Making the most of your ability to do an expert tune-up job will pay you big dividends in gaining you competitive leadership and neighborhood recognition of your competence as a heating expert. The combustion-testing kit shown here contains precision-made quality instruments with which you can make fullest use of your know-how in making a fuel conservation survey, checking a burner for wornout parts and needed repairs, or running an efficiency test to close a replacement deal.

The kit contains the well-known FYRITE CO_2 Indicator, the versatile MZF Draft Gauge, the all-metal TEMPOINT Stack Thermometer and the sensationally new TRUE-SPOT Smoke Tester. Now, for the first time you can adjust an oil burner quickly and expertly for highest CO_2 without objectionable smoke . . . do away with guesswork, and "hit and miss" fumbling in adjusting for clean firing. The "Scale of Soot" which comes with the TRUE-SPOT tells you the limits of permissible smoke for various burners and types of heating systems. This amazingly simple method of oil burner adjustment is the greatest advance in combustion testing since the introduction of the FYRITE. You will be proud to be among the first to own this "up-to-the-minute" combustion-testing kit.

Ask your Jobber for the FYRITE Utility Kit or write for Bulletin 764

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If You Were an Automobile Dealer You'd Sell the Self Starting Make

As applied to vaporizing oil heating equipment, the terms "automatic operation" and "thermostatic control" are widely used but frequently misleading. The fact remains that:

1. By itself, *a thermostat does not light the burner in an oil fired unit.*
2. In a unit with a pilot light there is always a low fire burning.
3. All the thermostat does is turn the fire UP or DOWN in such a unit.
4. *With truly automatic operation the thermostat turns the fire ON or OFF.*

The fact remains that, of all the vaporizing oil heaters, oil furnaces and conversion oil burners on the market,

THE ONLY ONES THAT ARE TRULY AUTOMATIC ARE THE ONES THAT LIGHT THEMSELVES and they are manufactured by H. C. LITTLE BURNER CO., INC., SAN RAFAEL, CALIFORNIA

THE H. C. LITTLE WAY	A Thermostat	+	An Electric Oil Control Valve	+	Exclusive H. C. Little Electric Ignition	= **TRUE AUTOMATIC OPERATION AND CONTROL**
THE OTHER WAY	A Thermostat	+	An Electric Oil Control Valve	+	A Pilot or Low Fire Stage	= **HIGH-LOW FIRE OPERATION**

If you were an AUTOMOBILE DEALER and sold the ONLY make with a self starter (like H. C. Little electric ignition) while all your competitors sold makes that had to be cranked to start, or else leave the engine running (as in pilot fire operation), think what a swell spot YOU would be in.

When YOU start looking for a good, profitable vaporizing equipment dealership, look for H. C. Little – the self-lighting, self-starting MONEY MAKER.

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Prescott, Ariz.
Reno, Nevada
Salt Lake City, Utah
Seattle, Wash.
St. Louis, Mo.
St. Petersburg, Fla.

the article you mention would cause the circulator to stop when the burner is stopped by the high limit control on the boiler. Study Diag. 5 of the article. The relay (used to start the burner and circulator simultaneously) receives current at all times from its own "Line" circuit; the circulator does also.

If you would be content to use one room thermostat for the entire building you describe, you could use Diag. 5 of the article, as then when the thermostat indicates heat is needed the burner and circulator would start together. As each unit heater became warm following this, wiring of the type shown in Diag. 2 would cause a reverse-acting temperature control to start the unit heater fan motor. Answering your question about starting only the burner when hot water is needed, Diag. 5 shows a tank temperature control wired to the thermostat circuit terminals of the burner panel. If you use a tankless heater, put an on-off switch in place of this control, since you say hot water will be provided only on rare occasions; turn on the switch only when hot water is needed. To provide hot water only at times if a hot water tank is used, wire an on-off switch in series with the tank temperature control shown in Diag. 5. During the heating season, of course, some hot water will be provided incidental to heating the building. Any switch you provide would start only the burner, at a time when this must be done to provide hot water.

Seemingly you want more elaborate controls and wiring than were described in the unit heater article, since you hint that you have in mind four room thermostats, one for each room. You may have in mind having any room thermostat turn on (1) the burner, (2) the circulator, and (3) the unit heater near the particular room thermostat. To provide this unusual type of operation, you would need four special relays, one for each room thermostat. Each relay would have three sets of contacts, which would close simultaneously when the thermostat circuit closes indicating a zone or room needs heat. When the relay snaps in because a thermostat circuit closes, one set of contacts (wired to the thermostat circuit terminals of the burner panel) would start the burner; the second set of contacts (wired in the live line to the hot water circulator) would start the circulator; and the third set of contacts (wired in the live line to the nearby unit heater) would start the proper unit heater motor. That states it simply, but there's this catch to it. In series with the unit heater motor should be also a reverse-acting temperature control. After the fashion of the control in Diag. 2 of the unit heater article, this control would keep idle the unit heater motor until the element of the heater is filled with hot water from the boiler. You must provide a reverse-acting control to prevent the unit heater motor from running when the heater is cold and would circulate cold air.

If you will use a tankless water heater, connect a reverse-acting boiler temperature control in series with the circulator motor.

In answer to your other questions: One circulator of ample capacity, in a system properly planned, will be as effective as several smaller circulators. Consult the circulator manufacturer to get details on piping and capacity of the circulator. If the heat of the hot water

the bottom of the chimney is important, too!

This gentleman makes his traditional entrance at the chimney top . . . but the bottom is where **you** come in.

OHI

That's where QUIET MAY comes in, too . . . with oil burners and oil-fired units that have earned the respect of home-owners and heating engineers since 1924.

If you want to sell oil heating equipment with world-wide acceptance, ask us about the prospects for a QUIET MAY dealership . . . **now!**

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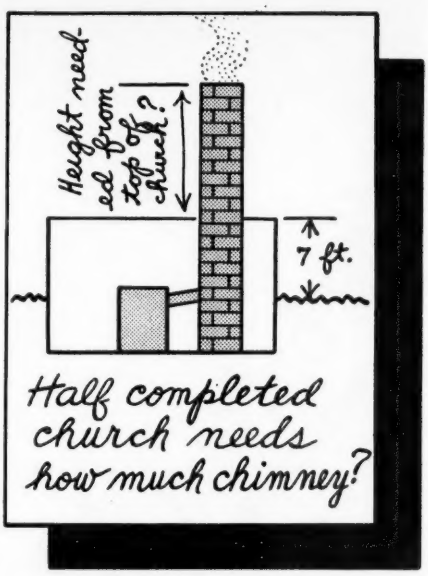
lines would otherwise be wasted largely because the lines are close to the roof, the lines should be insulated, especially since all the lines will be heated when the circulator starts because one zone needs heat. Ask the supplier of the special relays, with three sets of load-carrying contacts, for a detailed wiring diagram if you still need this.

* * *

Q. We have just installed a 150,000 Btu winter air conditioning furnace in a half completed church. The present top of the church is only seven feet above ground level and services are being held in the basement. My diagram shows the conditions. How high should the chimney be built in order to have good draft and combustion?

C.O.C.A., Ludlow, Mass.

A. Answering is made difficult because on the one hand a chimney undoubtedly high enough will be expensive and in this instance may be considered by many an eyesore. On the other hand, sufficient draft is absolutely



needed for proper operation of the oil-fired winter conditioner. Besides, the minimum chimney height relates to (a) the amount of smokepipe draft needed on the particular furnace to keep the over-fire draft slightly negative; (b) the CO_2 content of the flue gases; (c) the stack temperature; and (d) the height, nature, and proximity of buildings, trees, hills, etc. which, especially when the wind blows, can cause poor draft.

To cancel out two important variables, assume the stack temperature is not lower than about 500°, and assume the CO_2 reading is between about 8% and 12%. Assume also that item (d), above, introduces no difficulties. Assume also, or better still check on this first with the manufacturer of the furnace, that .07" to .08" smokepipe draft is satisfactory for the particular model furnace. On this basis, and with sufficient area of the chimney flue, a reasonable and suitable height for the chimney is 25 feet above the opening in the chimney provided for the smokepipe. Inside flue dimensions of 8" x 12" are suitable.

◈

George Wood has been added to the Master Kraft Engineering Department, Harvey - Whipple, Inc., Springfield, Mass. Mr. Wood, for the past five years supervisor of the engineering laboratory, York-Shipley, Inc., York, Pa., was an instructor in mechanical engineering at Pennsylvania State University for the previous four years. In addition, he has been a test engineer for Delco-Heat.

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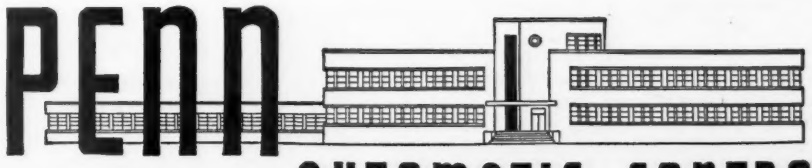

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FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES

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Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Groups' activities to reach the editor by the 18th.

New York Dealers Elect Officers, Hold Dinner-Dance

THE NOVEMBER 7 meeting of the New York Oil Heating Association, Inc., Long Island City 1, N. Y., elected the following officers for 1950: President, Thomas F. Hanney, Hanney Fuel Oil Co.; vice president, Edward G. Miller, Quiet-Heet Oil Burner Co.; treasurer, Phillip Hoffman, Revere-Halson Co.; secretary, Leon Bonfiglio, Leon Fuel Service; sergeant-at-arms, R. V. Perotto. Philip H. Schepp continues as executive secretary.

The Association's 10th Anniversary dinner-dance was held on November 29 at the Boulevard Cabaret, Elmhurst, N. Y. The program offered a choice of a turkey or roast beef dinner, entertainment, floor show and dancing to two orchestras. An entertainment committee, headed by Dan Bierman, with Matthew Conviser, Edward Miller and Joseph Reiss assisting, made arrangements for the affair.

Nassau Dealers Discuss Insurance, Gas Competition

FUEL OIL & Oil Heating Dealers of Nassau, Inc., Hempstead, N. Y., met on Monday night, November 21, with William Allyn, president, presiding.

The group heard a discussion of the state compulsory health and accident insurance which becomes effective for employers of more than four people after January 1.

After an introduction of the subject by A. E. Coburn, editor of FUELOIL & OIL HEAT, the members discussed the psychological effect of natural gas competition in the market when it arrives. Few dealers felt that gas impact on the market would be serious.

Elect Officers at Wisconsin Annual Meeting

ELECTION of officers for 1950 was held during the annual meeting of the Wisconsin Oil-Heat Association, Inc., Milwaukee 2, Wis., on November 17. The meeting, held at the Wisconsin Hotel, heard also annual reports of officers and chairmen and acted on final disposition of the group's advertising fund.

Candidates for office for a one-year term were: Lawrence Woehrer for president; John Hume and Clarence Gorder for vice presidents; John Weiler for treasurer; Harold Mottram for executive secretary; J. L. Savage, John Hopmeier and John Engle for three year terms as directors.

The October 27 meeting of the Association featured a report from the board of directors, detailing its findings on natural gas competition in other cities and what was done to meet it. It also proposed ways and means to secure necessary funds to finance a campaign to meet this competition.

State Fire Marshal Talks To Massachusetts Dealers

THE REGULAR monthly meeting of Massachusetts Oil Heating Association, Inc., Watertown 72, Mass., was held on November 15 at the Lafayette Hotel, Boston. Featured speaker at the meeting

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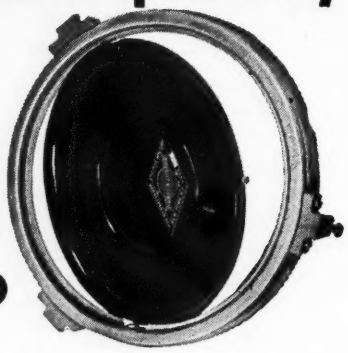

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was Everett J. Flanders, Fire Marshal for the State of Massachusetts, who discussed the State Code governing oilburner installations. The Association has been cooperating actively with the State Fire Marshal's office since 1940 in the preparation and revision of oilburner installation rules and Mr. Flanders' talk discussed revisions that now are being proposed.

The meeting was preceded by a steak dinner.

Nominate Slate of Officers for Heating & Ventilating Society

LESTER T. AVERY, president, Avery Engineering Co., Cleveland, has been nominated for president, American Society Heating and Ventilating Engineers, New York 10, N. Y. Other candidates announced on October 31 are: First vice president, Lauren E. Seeley, dean, College of Technology, University of New Hampshire, Durham, N. H.; second vice president, Ernest Szekely, president, Bayley Blower Co., Milwaukee and treasurer, Reg F. Taylor, consulting engineer, Houston, Texas.

Voting will be by letter ballot of the 7800 members and results of the vote are to be announced at the Society's 56th annual meeting in Dallas, Texas, on January 23-27, 1950. Only one nominee is presented for each office, but members may write in the names of other candidates.

New York Old-Timers Frolic at Barn Dance

DECEMBER 8 was the date of a barn dance, sponsored by the Oil Heat Old-Timers, Long Island City 1, N. Y. The gathering featured lively sessions of folk and square dances with kerchiefs, bonnets and hats furnished to get the participants in the proper mood. Prizes for dancing and games were distributed.

Map Schedules for 1950 Comfort Conferences

SPECIFIC DATES and places already have been selected for eleven indoor Comfort Conferences to be held during 1950, with tentative plans and locations under consideration in thirteen other cities. The conferences again are being sponsored by the National Warm Air Heating & Air Conditioning Association, Cleveland, under the direction of Guy A. Voorhess.

Conferences this year, with the exception of a regular three day school at South Bend, Ind., will be of two day duration. Instructional material for the sessions is described as enabling the student to review basic warm air heating principles and to learn the latest trends in low-cost house heating. A tentative outline lists for the first day a review of basic principles; review of figuring heat requirements; heating systems for low-cost houses, including gravity systems in houses with and without basements; winter air conditioning systems in basementless homes and a perimeter loop system.

Dates have been announced for the following 1950 Conferences: January 9-10, Evansville, Ind.; January 16-17, Columbus, Ohio; January 30-31, Green Bay, Wis.; February 2-3, Milwaukee; February 6-7, Minneapolis; February 9-10, Duluth, Minn.; February 13-14, Billings, Montana; February 17-18, Denver; February 20-21, Omaha; February 24-25, Des Moines and February 27-28, St. Louis.

YOU SELL VISCOS-O-TROL THEY SAVE

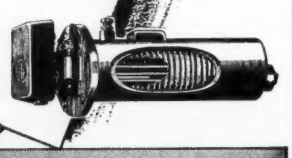
THE GREATEST ADVANCE IN OIL BURNER DESIGN IN 20 YEARS!

VISCOS-O-TROL The answer to the heavy oil problem. Uses No. 6 oil equally as well as No. 5.

VISCOS-O-TROL electric heating element is encased in water not in oil. Will not carbonize.

VISCOS-O-TROL makes every rotary burner a brand new prospect.

VISCOS-O-TROL offers huge profits for dealers.



DEALERSHIPS IN SOME TERRITORIES STILL AVAILABLE

ILI

THE INSTRUMENT LABORATORY INC.

934 Elliott Ave. W. - Seattle 99, Wash.

Make Your Hearths With the Original R & I Hearth Cement

You can be sure you're using the right cement to make your rotary hearth when you use R&I Hearth Cement, the original castable refractory.

Since it was introduced over 19 years ago oil burner men have poured thousands and thousands of hearths made of this cement. Many are still in service.

To use, simply mix with water and pour over the sheet metal hearth plate of rotary burners. A quick troweling gives it a smooth, hard surface that is extremely rugged.

Get it from your supply house. Write us for Bulletin OB-101.

R&I

Refractory & Insulation Corp.

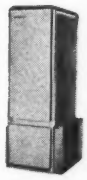
116 Wall St., New York 5, N. Y.
Chicago 4, Ill. - Newark 2, N. J.
Philadelphia 2, Pa.

NO JOB TOO LARGE

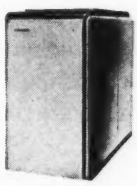
NO JOB TOO SMALL

Luxaire BUILDS A UNIT TO FIT!

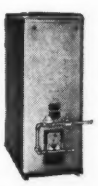
Series A
Gas-Fired, Steel Air Conditioning Unit



Series H
Gas-Fired, Steel Utility Air Conditioning Unit

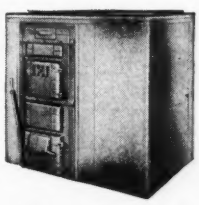


Series O
Gun, Oil-Fired Air Conditioning Unit: also available in Utility and Gravity Furnace models. Convertible to Gas.



Series G
Gas-Fired, Steel, Gravity Furnace.

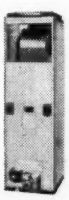
Series V
Vaporizing Oil-Fired, Air Conditioning Unit; also available in Utility and Gravity furnace models. Convertible to Gas.



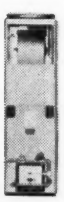
Series AC-700-F
Coal-Fired, Steel, Air Conditioning Unit.

Series No. 700
Coal-Fired, Steel, Gravity Furnace; also available with Round Casing

Series C
Coal-Fired, Cast Iron, Gravity Furnace; also available with Square Casing, and in Pipeless style.



No. HC-95-E,
Gas Counterflow Air Conditioning Unit 76,000 BTU at Discharge Outlet.



No. VHC-75-E,
Oil Counterflow Air Conditioning Unit 75,100 BTU at Discharge Outlet.

For GAS...For OIL

with STEEL Heating Elements

with CAST IRON Heating Elements

There is a Luxaire heating or air conditioning unit that is built to supply the requirements of new or old homes in the year, 1950.

There are units for all fuels—Gas, Oil and Coal. Many are approved for both Gas and Oil! There are both Steel and Cast Iron heating elements available. There are gravity furnaces with either square or round casings. There are air conditioning units for both basement and utility room installation.

AND for the home without a basement, there is the new COUNTERFLOW Unit, with blower located in top of cabinet, discharging the warm air downward into pipes or ducts imbedded in the concrete floor slab, and which will provide "Perimeter" heating described in recent bulletin issued by National Warm Air Heating and Air Conditioning Association.

Get in touch with the Luxaire jobber near you for catalogs and prices, or write us for his name.

THE C·A·OLSEN MANUFACTURING COMPANY

Luxaire HEATING & AIR CONDITIONING UNITS

ELYRIA 12, OHIO

fueloil & oil heat

In addition, Conferences also will be held in Atlanta, Ga.; Birmingham, Ala.; Chicago, Ill.; Fort Wayne, Ind.; New Jersey; Philadelphia and Pittsburgh, Pa. and South Boston, Mass. Dates will be announced later.

Tentative locations for additional classes are: Binghamton, N. Y.; Cincinnati, Ohio, Detroit and Kalamazoo, Mich. More information about these locations will be announced by the Association when they become definite.

Truck Tank Institute Sets Annual Meeting Dates

ANNOUNCEMENT has been made by the National Truck Tank and Trailer Tank Institute, Chicago 3, Ill., that its annual meeting will be held at the Hotel Morrison, Chicago, on February 14 and 15.

◈

Thomas Hannah, Jr., manager of the Washington sales office, has been made manager of the central business contact department, American Radiator and Standard Sanitary Corp., Pittsburgh, Pa. He has been with American-Standard for twenty-two years.

Readers' Forum

AMERICAN MACHINE & FOUNDRY CO.
New York 17, N. Y.

Editor:

Thanks very much for the piece in your October issue about our Jet Tobacco Curer, but I am afraid I must offer a slight correction.

The subhead on the article said that the Jet Curer was "developed under license," which is incorrect. The body text of the article itself contains no reference to any such development and though we did have some connection with "Jet Heet" at the beginning of the Jet Curer program several years ago, this had long since been severed and the Curer as it is being marketed today is in no way akin to the piece of equipment which existed during the "Jet-Heet" period.

W. N. MCDONALD

* * *

MAC-KINNEY OIL COMPANY
Highland Park, N. J.

Editor:

It seems to me that someone should check the manufacturer of the small cheap oil units that are sold to contractors in lots of two hundred to one thousand for "new small home projects." This unit usually burns through a nozzle of .068 and should use #1 range oil. However, they advertise to burn #2 and #3 oil. In these small units which are usually warm air, any oil heavier than #1 will carbonize and clog up and give no end of trouble. Our company refuses to sell #2 oil to any of these projects, but other oil companies sell to them and have all kinds of service trouble.

This condition is harmful to the domestic fueloil trade in general, and I wish there was a way to enlighten those prospective buyers before they get into trouble.

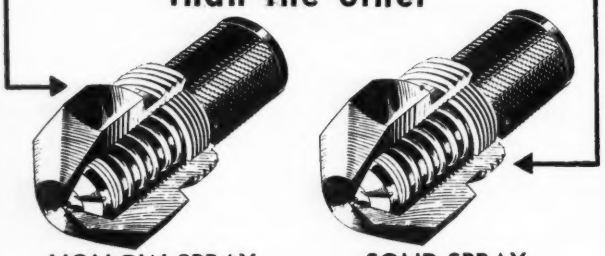
R. H. MAC KINNEY

◈

H. George Richardson has been named sales representative in southern Idaho, National Radiator Co., Johnstown, Pa., and has established headquarters in Boise, Idaho. He is branch manager, Thermal Engineering Co., Boise, and is representing National for its entire line of heating equipment.

APTHORP *True Alignment* NOZZLES

BOTH ARE PERFECT
but one may be *BETTER*
for a *PARTICULAR BURNER*
than the other



HOLLOW SPRAY SOLID SPRAY

Every burner has a certain air pattern that is governed by the design of its particular head. Either an Apthorp Hollow Spray or Solid Spray Nozzle will mate best with this air pattern. By use of the right type, CO^2 will increase from 2% to 4%.

STOCKED BY LEADING DISTRIBUTORS EVERYWHERE

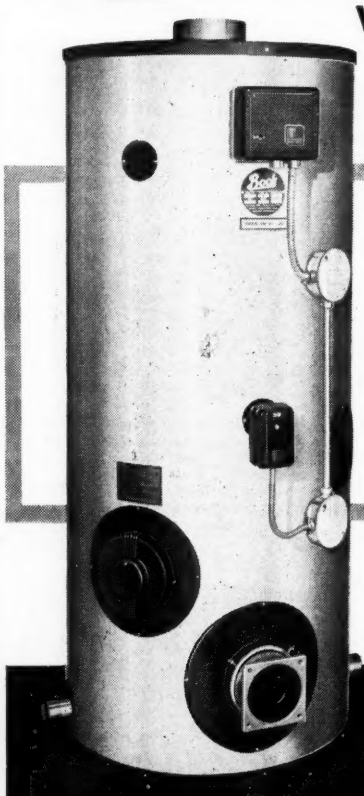
BOSMACO

WRITE FOR COMPLETE NOZZLE BULLETIN

BOSTON MACHINE WORKS COMPANY
Oil Heating Supplies Division, Manufacturers, Lynn, Mass.

THE ACCEPTED WATER HEATER

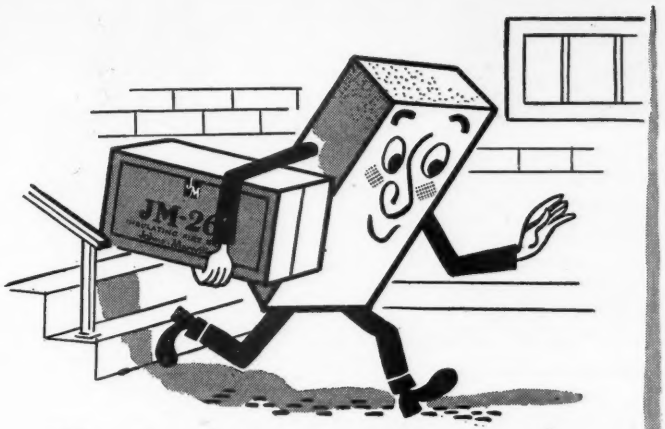
Must have a gun type burner to handle todays catalytic fuel.



Bock water heaters come in three popular sizes including a low cost 30 gallon model for residences. They are supplied with or without the oil burner. Come with electric wiring in place and with a removable combustion chamber.

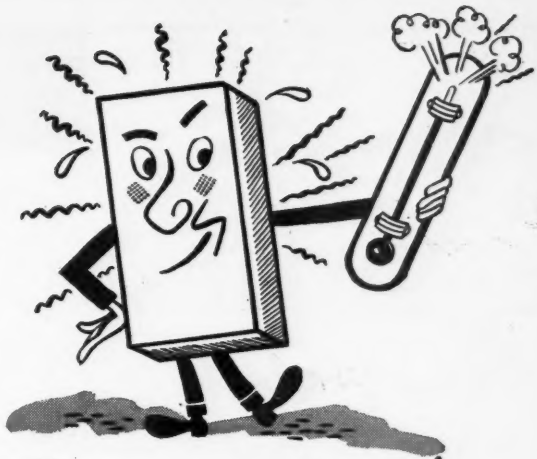
★ *Reliability*
★ *Satisfaction*
★ *Repeat Sales*

BOCK CORPORATION
MADISON, WISCONSIN



I'm light in weight!

...and easy to carry on the job

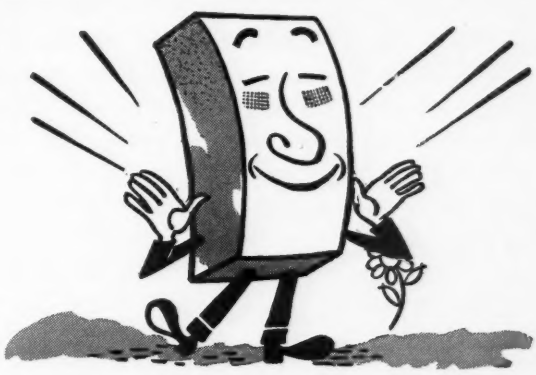


I'm an insulator!

...I heat up quickly ...but cool fast, too

I'm adaptable!

...can be readily cut to build any size or shape of firebox



I'm Johns-Manville Insulating Fire Brick!

...I bring more profits per job to you ...more heat per gallon to your customers

Excuse me—for taking pride in what I can do for you and your customers...

You'll find that I'm *so* easy to work with... so easy to cut and shape with just a hacksaw blade into square, round, oval or pear-shaped fireboxes...

...Then just dip me into J-M 1626 Bonding Cement, and rub me into place... fill in behind me with J-M Dobfill. Presto, the job is done!

I'm not kidding about my light weight, either. Brother, you won't have to break your back lugging me around!

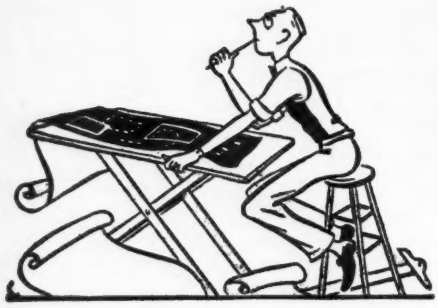
And here's a little earful on what I can do for your customers. I cut fuel use up to 10%. I get up skin heat in seconds! I don't have to absorb heat like dense firebrick. This means the firebox gets hot faster eliminating wasteful burning of fuel. Because of this, too, I help retard soot smoke and odor. Also, my cellular structure makes for quieter operation.

I'm available in six types...JM-1620, JM-2000, JM-2300, JM-2600, JM-2800—and for industrial use the new JM-3000. See your distributor about me, or write to Johns-Manville, Box 290, New York 16, N. Y. In Canada, write to 199 Bay St., Toronto, Ont.

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville INSULATING FIRE BRICK

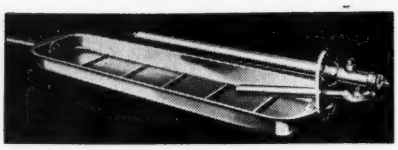
"For Skin Heat in Seconds" in Fireboxes



New Products

Thermo-Drip Humidifiers Automatically Controlled

THERMO-DRIP humidifiers, developed by Automatic Humidifier Co., Cedar Falls, Iowa, depend on a bimetal element projecting over the vapor pan for regulation. The element expands and contracts as furnace temperatures change and opens, throttles or closes completely the water valve with which it is coupled. The water feed is regulated so that it drips into the vapor pan for quick evaporation, and even at peak furnace temperatures the feed is a rapid, continuous drip rather than a steady or intermittent stream.

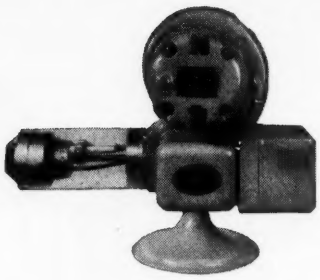


There are twelve models offered, two with stainless steel vapor pans 15" and 10" in diameter, the other ten models with pans ranging from 15" x 4" to 34" x 8" evaporating surfaces. The water feed valve, located on the outside of the furnace, may be regulated manually to increase or decrease evaporation to suit individual requirements.

Monarch G-74 Head Of All Steel Construction

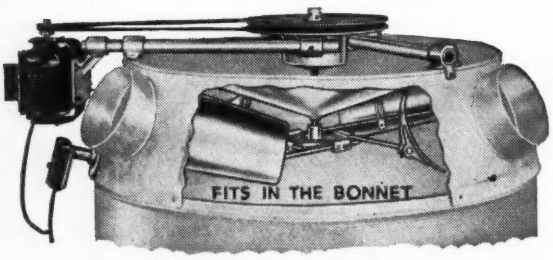
MODIFICATIONS have been built into the G-74 combustion head made by Monarch Mfg. Works, Inc., Philadelphia 34, Pa. Main differences between the old and the improved head are that the large porcelain body and porcelain spiral used originally have been eliminated. In their place are employed a stamped metal plate and standard 9/16" diameter electrodes. Performance is not affected materially, but the possibility of breakage of porcelain parts is avoided.

The Monarch head, briefly, consists of a multi-vaned, stainless steel turbulator which directs a ring of high velocity spinning air into the outer area of the cone of atomized oil, while central angular blades spin a mass of air into the center of the oil cone. The unit can be adopted readily to most oilburners already installed, but is offered also to manufacturers for incorporation into



Gun type burner, *made by Weatherall Engineers, Providence 4, R. I., equipped with Electronic Turbulator head. The unit was described on page 102 of our November issue, but the cut was shown in an inverted position. The above view shows it right-side-up.*

Now CONTROL HEAT DISTRIBUTION ON GRAVITY FURNACES with CIRCULATAIRE



EASILY-QUICKLY INSTALLED, WITHOUT REMOVING BONNET!

No damage to firepot caused by force of cold air on hot castings as occurs with other types of conversion blowers.

Include a CIRCULATAIRE with each new gravity job and also take advantage of the thousands of gravity furnaces in your community that need a CIRCULATAIRE to balance heat distribution.

NOW READY! New CIRCULATAIRE Selling Aids help you sell CIRCULATAIRES and boost new furnace sales.

NO COLD POCKETS!

EVENLY HEATED AIR ENTERS ALL FURNACE PIPES!

NO NEW SHEET METAL WORK REQUIRED!

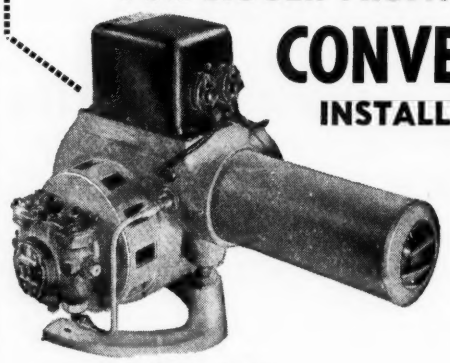
A COMPLETELY PACKAGED UNIT
Nothing for the dealer to furnish except limited amount of labor.

GET THE FACTS TODAY! WRITE . . .

"CIRCULATAIRE" DIVISION OF CORLETT-TURNER CO.
1007 S. KOSTNER AVE., CHICAGO 24, ILL.

SEND FOR . . . SPEC. #60

FOR BIGGER PROFITS ON CONVERSION INSTALLATIONS!



MODEL G.A.F.
1 to 3 Gal. Cap.

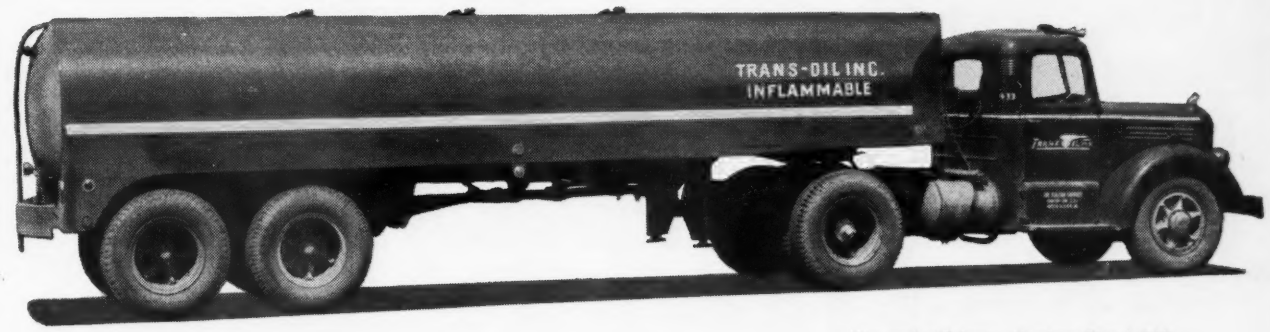
The perfect unit for all oil conversions.

- OTHERS TO 20 GAL. CAP.
- BOILER-BURNERS
- WARM AIR CONDITIONERS
- FLOORLEVEL
- BASEBOARD
- HOT WATER
- RADIATION

GENERAL Automatic Est. 1924

Write Today!

GENERAL OIL BURNER CORPORATION
2300 Sinclair Lane Baltimore 13, Md.



Big and efficient—Quaker City 6,500 gallon tank trailer, 3 compartments.

ENGINEERED TO GIVE

MAXIMUM LOAD

WITH PROPER AXLE DISTRIBUTION

6,000 gallon, 3 compartment Quaker City tank trailer. Double drop (gondola) construction.

QUAKER CITY TANK TRAILERS

The key to efficient, economical tank trailer performance is *maximum load*. Quaker City frameless Tank Trailers are specifically—and individually—engineered to give you the maximum load possible under State highway laws. Even more important, the load is properly and evenly distributed on all axles so as to prevent breakdowns and assure maximum tire wear. There's no excess weight on a Quaker City Tank Trailer.

A big one! 6,300 gallon Quaker City tank trailer with 10 compartments.

Quaker City Tank Trailers are *built* right too. There are no skimped or careless welds. None of our men are on a piecework basis. All of our welders are experts, and many are qualified A.S.M.E. and A.P.I. code welders. Each tank receives at least two tests after welding. Before the skirting, under-structure and accessories are attached, it is tested with air, under pressure. Then, after mounting, the complete tank (including the piping) is thoroughly tested with water. Tanks with pump and meter equipment also get a fuel oil test.

4,100 gallon, 4 compartment Quaker City tank trailer.

All this pays off where you want it to—on the road. Throughout the world, Quaker City Tanks haul big loads *economically* . . . every minute of every day. Write for complete information.

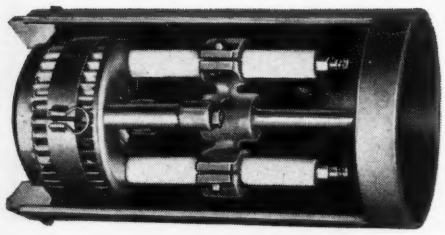
Quaker City semitrailer. 5,200 gallon capacity. 8 compartments.

Quaker City 4 compartment unit, 5,000 gallon capacity.

QUAKER CITY IRON WORKS

Gaul & East Ontario Streets • Philadelphia 34, Pa.

ONE OF AMERICA'S LEADING TRUCK TANK BUILDERS FOR OVER 25 YEARS



original equipment. Heads are available to fit 3½", 3⅞", 4", 4¼", 4½", 4¾", 5" and 6" I.D. air tubes.

Oblong Flame Inspection Mirror By Delavan Mfg.

A MODEL of the flame inspection mirrors made by Delavan Mfg. Co., Des Moines, Ia., now is available in an oblong shape. It was so designed to permit inspection through openings as small as 2" in diameter, the mirror measuring 1 15/16" wide and 3⅞" long.

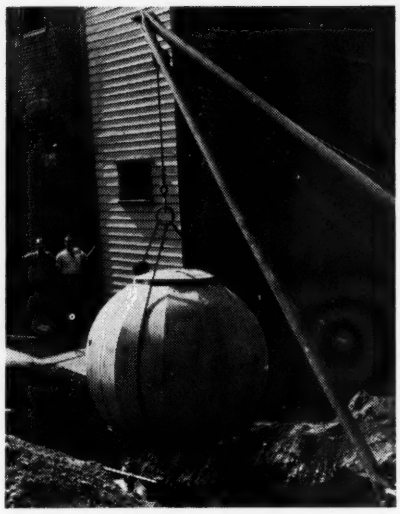
Furnished with reflecting surfaces on both sides, the metal mirror will stand considerable heat and is equipped with a 20" handle made in three sections. A heavy cloth bag also is furnished to protect mirror surfaces. The new model supplements the circular mirrors, 3⅞" in diameter, which Delavan makes.

Consphere Concrete Underground Fueloil Tank

SPHERICAL all concrete underground fueloil storage tanks have been developed by the Conspheres Co., Springdale, Conn. The spherical design, which produces maximum strength, results in the presently available 625 gal. tank using 1¾" thick walls, and measuring 6 ft. in diameter. Plans also are in progress for a 1200 gal. capacity tank. The spherical shape is described as distributing the force of a blow or strain to the complete surface of the tank, rather than absorbing it at any one point, as would be the case if square or rectangular construction were used.

Porosity is eliminated through a precisely controlled proportion of cement, water, mixing and vibration time. The tanks are moulded in precision steel forms and then moist cured for seven days. An oil resistant pore filler next is applied in three separate coats and, finally, manhole covers, with four 2" couplings cast in, are applied and grouted in.

It is the intention of Conspheres Co.



to set up exclusive licensees in various cities and areas on a royalty basis. In this way, the one ton weight of the tanks would present no transportation problem. All tanks are intended to be sold at a delivered price into a tank excavation furnished by the purchaser.

The company reports that exceptions to city and state regulations calling for installation of steel tanks have been secured and permission for use of Consphere tanks has been granted in Connecticut.

get rid of the "cold room" problem!

WITH THE Gorton SYSTEM of Vaporizing and Equalizing Valves

THE GORTON SYSTEM . . . gives automatic even distribution of heat to every room in the building . . . No cold rooms . . . Stops fuel waste.

EASY TO INSTALL . . . Any steam heating system can be easily changed to a GORTON VAPOR EQUALIZING SYSTEM . . . No piping changes necessary.

PROFITABLE TO HANDLE . . . A sure winner of satisfied customers!

Get the facts . . . Write for Bulletin 117 today!

GORTON HEATING CORP.
SINCE 1887
Manufacturers of High Grade Heating Equipment
CRANFORD • NEW JERSEY

DEALERS WANTED!

SWIRLING HEAT

THE BETTER OIL BURNER!

Live customers are waiting for the superior performance that Swirling Heat can deliver! *We are looking for live, experienced dealers who will welcome a line of better burners.* Let's get together!

- NO COMBUSTION CHAMBER REQUIRED
- NO CARBONIZING ON NOZZLE OR IGNITION POINTS
- HIGHER CO_2 — GREATER EFFICIENCY
- INSTALLATION PROBLEMS GREATLY SIMPLIFIED

SWIRLING HEAT CORPORATION, 1775 BROADWAY, NEW YORK 19, N. Y.
RESEARCH LABORATORIES, 2818 N. WASHINGTON BLVD.
SINCE 1929 ARLINGTON, VIRGINIA

WHY STOCK FOUR PUMPS WHEN ONE TUTHILL PUMPRITE FUELSTAT

Meets all 4 Needs

WITH THIS TUTHILL FUELSTAT YOU CAN

. . . REVERSE SHAFT ROTATION IN THE FIELD

. . . REVERSE NOZZLE PORT IN THE FIELD

MEET EVERY REQUIREMENT

TUTHILL PUMP COMPANY
939 East 95th Street • Chicago 19, Illinois
Dependable Oil Burner Pumping Equipment for 25 Years

MANUFACTURERS
DEALERS
SERVICE MEN

This booklet can help you solve your oil burner pump problems. Write for your free copy today.

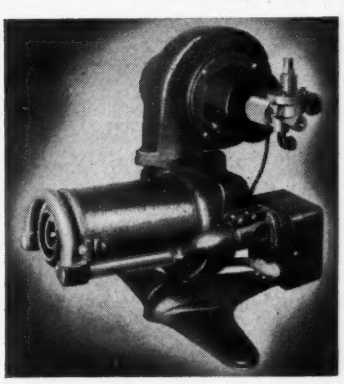
TUTHILL PUMP COMPANY
939 EAST 95th STREET • CHICAGO 19, ILLINOIS

HOW A TEN-CENT BALLOON SELLS OIL BURNERS

Convincing Proof That Electrol Franchise Is Tops!

Just a ten-cent balloon can prove Electrol's famous "Ball Flame" efficiency!

Put a balloon in front of the nozzle of *any* competitive burner—gun type, pot type, rotary—and you'll see that balloon blow away whenever there's pressure. Try it with an *Electrol* Burner, though, and the balloon will remain *suspended and spinning in mid-air—just like the "Ball Flame" does when the burner's in use!*



This constant suspension means the "Ball Flame" *never* touches the chamber's walls—results in *no* soot, more heat, *greater* efficiency. The "Ball Flame" is actually a revolving container of the *most intense heat* in the burner business. And—*no other burner has it!*

The balloon test is selling more dealers on profitable Electrol franchises . . . it's selling more new customers for them, too! Electrols are installed in small homes . . . large homes . . . huge industrial units; there's a handsome, durable Electrol Burner for *any* heating need!

You, too, can share the success of our present dealers.

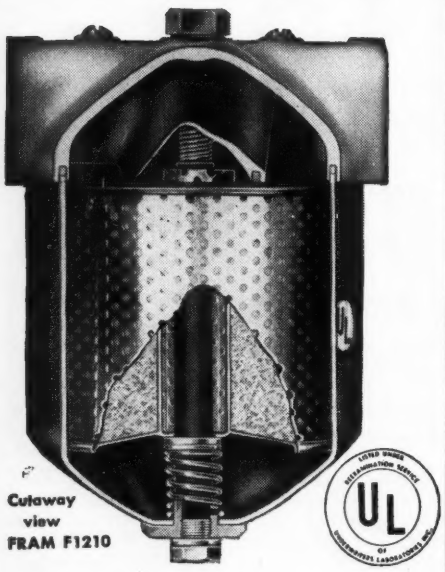
Manufacturers of:

- **"Ball Flame" Conversion Burners**
- **Domestic Water Heaters**
- **Boiler-Burner Units**
- **Electrolaire Warm Air Conditioners**
- **Burners for Homes and Industries**

SINCE 1918
ELECTROL
BURNER MANUFACTURING CO., INC.
Rutherford, New Jersey
FAMOUS BALL FLAME EFFICIENCY

NEW FRAM FUEL OIL FILTERS

Cut Service Calls
Build Satisfaction
Make Repeat Profits



Cutaway view FRAM F1210

Filters the oil clean through an entirely new development • Removes dirt, rust, scale, water • Assures steady flow of clean oil to the burner • Protects pump valves and nozzles • Reduces service expense and needless, troublesome calls • Easy to install • Replacement cartridge builds repeat profits • Available in capacities of 2000, 4000, 6000 gallons of oil consumed per year.

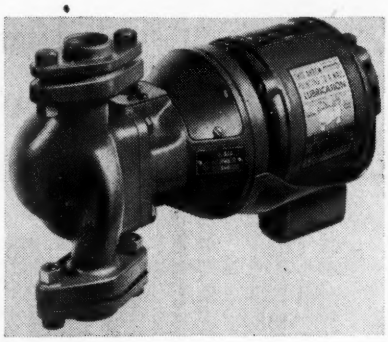
FRAM CORPORATION
Providence 16, R. I.

Headquarters for

FRAM OIL · AIR · FUEL FILTERS

B & G 75 Circulator For Small Home Use

A CIRCULATING PUMP, particularly adaptable to the small home field, has been announced by Bell & Gossett Co.,



Morton Grove, Ill. The B & G 75 booster has ¾" flanged connections and employs two-bolt flangers, the joint construction of which is described as permitting tightening with little more than finger pressure. Flanges are forged steel and nonbreakable.

The pump uses a 1/15 hp motor and features complete oil lubrication and a water-tight seal. Its shaft is of hardened steel, ground and polished to a tolerance of 1/10,000 of an inch and its overside bearings are diamond bored. Quiet operation is advanced as one of its most commendable features.

Williamson Furnace Line Includes Oilfired Hi-Boy

NO. 534-10B, oilfired Hi-Boy winter air conditioning unit is included in the line of the Williamson Heater Co., Cincinnati 9, Ohio. Developing 84,000 Btu at the bonnet, it is a companion unit with three floor models, rated at maximum outputs of 112,000, 151,200 and 196,000 Btu/hr.

On all, oilburner, blower and filter are standard equipment, as well as a refractory combustion chamber. Standard controls, with a barometric draft regulator also are included, with a humidifier offered as optional equipment. Steel cabinets are finished in Cordova gray.

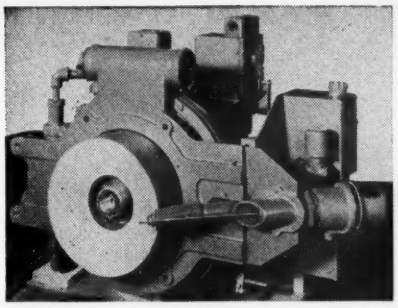
Wheelco Flame-otrol Combustion For Industrial Installations

SERIES 1300 Flame-otrol combustion safeguard, announced by Wheelco Instruments Co., Chicago 7, Ill., for industrial and commercial oilfired installations, and similar applications, uses the flame itself as the electronic link in a simple electronic circuit to provide instantaneous switching action. It detects the presence or absence of a flame and features such improvements as safe-start and interchangeable plug-in units for increased program variety for manual and automatic ignition. It is adjustable to a range of purge, preventilating and ignition program cycle combinations.

Ray Gas-Oil Burner Designated ARC Model 50

A COMBINATION gas and oilburner, developed and being produced by Ray Oil Burner Co., San Francisco 12, Calif., consists of a Ray rotary type oilburner of conventional design, incorporating an angular vane nozzle, viscosity valve, dual pump and reservoir, in conjunction with a gas housing and nozzle designed for low pressure gas supply. The gas burner parts consist of a housing built into the position of the usual nozzle protector. Gas is introduced in such a manner to utilize fully the energy in the high pressure primary air supply, with gas

Volu-Trol, *modulating blower control offered by the Volu-Trol Co., St. Paul 3, Minn., described in the November 1948 issue on page 116, consists of a thermostatic bellows, installed in the warm air plenum, a cable connecting to a damper in the return air duct and a spring to maintain tension on the cable. The bellows automatically adjusts the position of the damper, depending upon plenum temperatures. In this way, a greater or lesser volume of warm air is circulated by the blower. The cable, between the bellows element and damper, travels out when plenum temperatures exceed 90° F., and for every degree of heat applied to the bellows a uniform and constant amount of elongation occurs.*



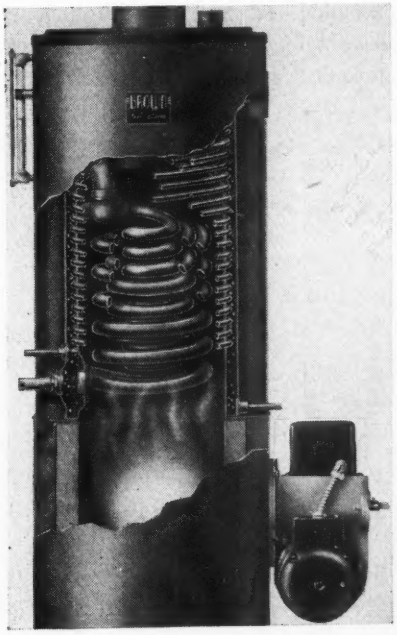
and air combined intimately in two stages before mixing with secondary air, injected through a vaned annual opening concentric with the nozzle.

Models are available for fully automatic gas firing, fully automatic or semi-automatic oilfiring, with changeover from one fuel to the other possible in less than one minute. Models are presently available with ratings of 65 boiler hp, and sizes up to 335 hp are to follow soon.

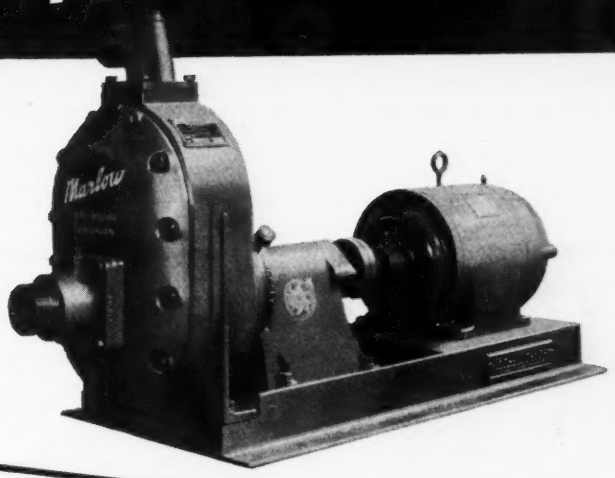
Brown Fuel Saver Is All Copper Heating Boiler

FUEL SAVER, oilfired boiler whose entire heating unit consists of copper coils, water jacket and bronze fittings, has been announced by Brown Oil Burning Equipment Co., Cambridge 39, Mass. It is rated at 500 sq. ft. of forced hot water radiation, measures only 4'4" high and has an outside diameter of 17-5/16".

The unit features a copper coil, built in the center of unit, for high heat conductance, has a circular copper coil from the top of the boiler to the base for a supply of domestic hot water and ex-

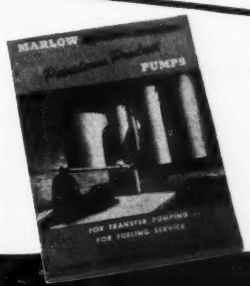


The MODERN pump for petroleum products



ONLY a MARLOW offers all these advantages . . .

- Centrifugal action — quiet and efficient.
- Self-priming on suction lifts.
- Self-purging — will not vapor lock.
- Higher capacity for size.
- No rubbing parts — long life and low maintenance cost.
- No internal priming valves or devices. Positive priming action.
- No gear reductions — operate at standard motor speeds.
- No by-pass or pressure-relief valves; no burned out motors or overloaded engines.
- May be placed outdoors — no pump house required.
- Continued high capacity at low initial cost.
- Marlow self-compensating shaft seal.



Send for a copy of bulletin PM48 that gives details.

MARLOW PUMPS • RIDGEWOOD, N. J.

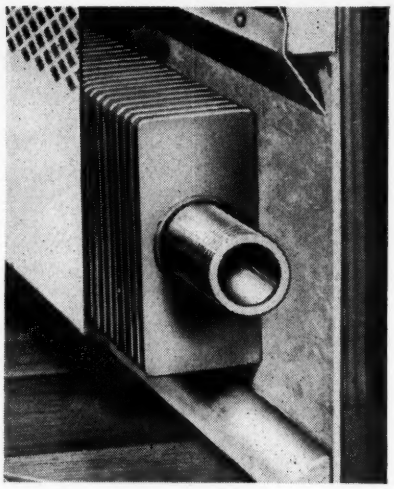
MANUFACTURERS OF QUALITY PUMPS SINCE 1924

posed contact walls, surrounding the coils also are copper. A moulded insulating fire brick combustion chamber, incorporated in the Fuel Saver, is backed with mica or rockwool insulation.

H. B. Smith Handling Sterling Convectors

BASEBOARD CONVECTORS, made by Sterling Radiator Co., Inc., and distributed nationally by H. B. Smith Co., Inc., Westfield, Mass., are constructed of high quality pipe and mechanically bonded steel fins. Both recessed and non-recessed types are available, in 1" and 1½" pipe sizes. All types are furnished in elements of 1 to 12 ft., in increments of 6", with front casing, hanger strip and insulating back board available in 8 ft. lengths only. Enclosure fronts may be equipped with completely assembled dampers, recommended for installation in bedrooms or other places where it is desirable to reduce or shut off heat.

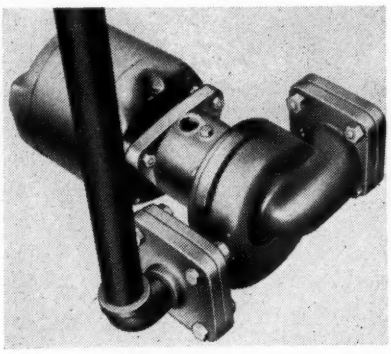
Sterling Finmaster, fin-type radiators, are offered also for applications in schools, factories, apartment houses and similar commercial buildings. Available



in 1¼" and 2" pipe sizes, Finmasters may be installed singly, or in multiple tier assemblies.

Fairbanks, Morse Hot Water Circulating Pump

A HOT WATER circulating pump, announced by Fairbanks, Morse & Co., is offered in sizes from 1" to 2½". The pump, available for immediate delivery,



utilizes a crane type mechanical seal to protect against leakage and secures smooth and quiet operation by the use of a molded rubber shaft coupling.

It operates in either horizontal or vertical positions and spans a capacity range from 36 gpm for the small size to a maximum of 118 gpm for the 2½" model. The cast iron body of the circulator is equipped with a large oil reservoir.

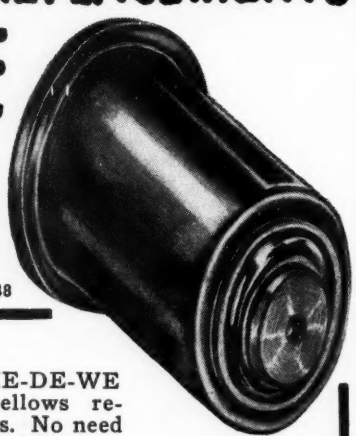
Thermcap Eliminates Chimney Down Draft

THERMCAP, copper chimney pot developed by Wigwam Flue Top Co., Abington, Mass., has been designed to eliminate down drafts, stop condensation and shelter the chimney from rain and snow. The device is described as functioning primarily by regulating the draft and diverting air currents. By its action it

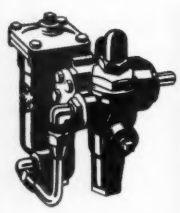
SIMPLIFY BELLOWS REPLACEMENTS with HE-DE-WE

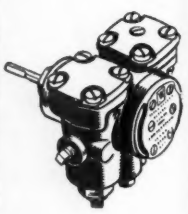
PRONOUNCED (HE-DEW)

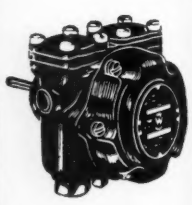
OVER 50,000 NOW IN USE

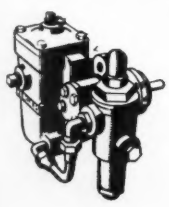


Licensed under U. S. Patent 2,460,048









Sid Harvey's HE-DE-WE simplifies your bellows replacement problems. No need for a special kind of bellows for each fuel unit because HE-DE-WE is an exact replacement for bellows used on four fuel units.

TRIPLE DUTY

You get triple your money's worth when you buy HE-DE-WE because HE-DE-WE costs you less than the cheapest metal bellows but will last at least three times as long. HE-DE-WE diaphragm is made of a material that will withstand normal flexing almost indefinitely, and is not affected by any of the impurities found in fuel oil such as acids, water, or sludge.

CHEAPER BY THE DOZEN

HE-DE-WE can be bought individually but they are cheaper in dozen lots. The Harvey Bellows and Seat "Packages" are a handy combination of HE-DE-WE and popular seats.

Consult Sid Harvey's Catalog for details. Fully guaranteed.

All Sid Harvey Products available at any recognized wholesaler.

Specialists in "Parts to Make Sick Oil Burners Well"
DISTRIBUTORS IN PRINCIPAL CITIES

SID HARVEY INC.
VALLEY STREAM, NEW YORK

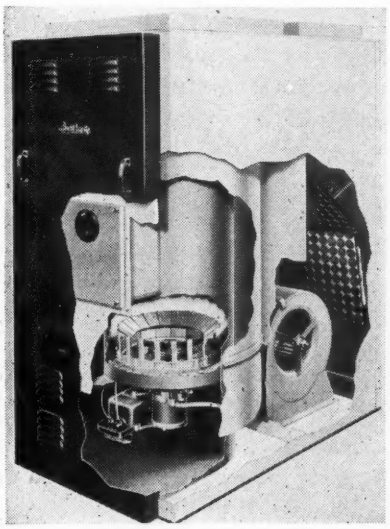
maintains a temperature within the flue that is always above the dew point and prevents moisture condensation, which combines with carbon deposits to form creosote.

Conical in shape, standard size Thermcaps fit 8 x 8, 8 x 12 and 12 x 12 chimneys. Having a circular base, the device can be fitted to a chimney without exact measurements so long as the diameter of the circle is within the square or oblong of the chimney top and its base covers the flue.

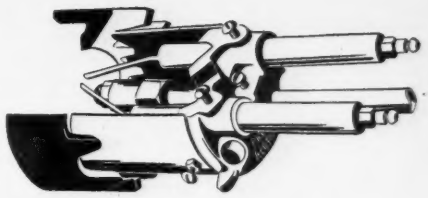
Fluid Heat Adds Rotary Fired Furnace to Line

FLUID HEAT DIV., Anchor Post Products, Inc., Baltimore 24, Md., announces the addition of a rotary fired winter air conditioning unit to its domestic heating line. Employing a Fluid Heat rotary burner, the unit delivers 90,000 Btu/hr of filtered warm air and incorporates a Flame-Flex stainless steel hearth ring, designed to force the flame to wipe the inner wall of its new drum type heat exchanger.

The winter conditioner measures 57" in height, and occupies a floor space of 47½" x 26½". Finish conforms to most other Fluid Heat models, is beige and red, infra-red baked enamel.



Bunzenizer Head Developed By Airflame For Gun Burners



BUNZENIZER heads for gun type oil-burners, developed by Airflame, Inc., Waukegan, Ill., are designed to provide for air control at the outer end of the blast tube and to build up within the tube sufficient static pressure to overcome fluctuation of air volume. Instead of spinners or air cones, the unit forces the air to the direct center, copying the principle of the Bunsen burner.

The resulting flame is described as intensely radiant and, as a further feature, the air driving across the front of the nozzle keeps it cool and carbon-free.

THERE'S ALWAYS A USE FOR

JIFFY JUICE

The SERVICEMAN'S FRIEND

Yes, there is a thousand uses for JIFFY JUICE because it digests tar, dirt, scum, paint, sludge, grease and hard carbon in a hurry. JIFFY JUICE cleans nozzles, strainers, pumps, valves, fittings, etc. like magic. No need for scrubbing or scraping even in the hard to get at corners. JIFFY JUICE will clean rotary heads and even free stuck foot valves on buried tanks.

SAFE, TOO

JIFFY JUICE is safe to use, too, it's non-inflammable, gives off no toxic fumes, and will not harm any metal part.

ECONOMICAL

JIFFY JUICE may be screened and used over and over again without losing its strength. Freezing does not affect it. A glycerin-like layer floats on top of JIFFY JUICE to prevent the evaporation of the active ingredients.

STOCK UP NOW

A quart JIFFY JUICE kit with wire mesh baskets for easy handling of small parts should be in *every* service car and a five gallon service container in every shop. For prices consult the latest Sid Harvey's Catalog, or your wholesaler.

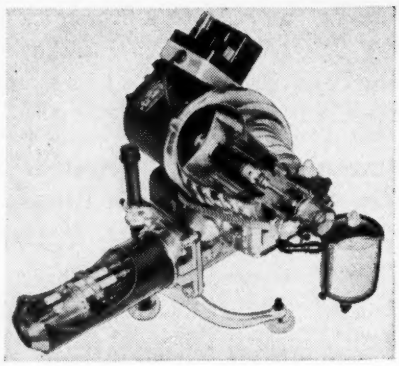
Specialists in "Parts to Make Sick Oil Burners Well"
DISTRIBUTORS IN PRINCIPAL CITIES

SID HARVEY INC.
VALLEY STREAM, NEW YORK

Commercial Standards models from ½ gph capacity now are available in high pressure models, with low pressure models scheduled for early production.

Madsen Offers Four Models Of Burners With Shell Head

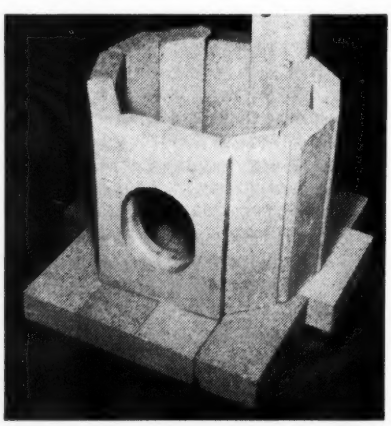
ALL FOUR models of gun type oilburners in the line offered by Madsen Service, Minneapolis 8, Minn., are furnished with Shell combustion heads and Minneapolis-Honeywell electronic controls. Capacities range from ¾ to 14 gph, with a delayed oil valve and clutch drive provided on the larger models.



A specially designed combustion chamber, correctly sized and pre-cast, is sold with the burner. All components are standard parts to facilitate service or replacement. Existing burners may be modernized by adding the Madsen housing and Shell combustion head, retaining and using the present fuel unit, motor and transformer.

Harbison-Walker Chamber Uses Insulating Refractory

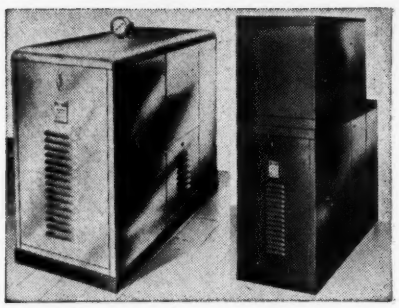
A LIGHTWEIGHT refractory combustion chamber has been developed by Harbison-Walker Refractories Co., Pittsburgh, Pa., for use in domestic oilheating installations. It uses insulating refractory brick, which is power pressed into shape. The porous structure of the brick creates a greater surface area, said to heat more rapidly and retain heat on the outer surface.



The insulation brick is reported further to eliminate noise, smoke, odor and soot, with the added advantages of quick thermostat response, and clean burning.

Oilfired Hi-Therm Units Augment Petro's Heating Line

TWO HI-THERM units have been added to the present line of oilburning equipment manufactured by Petroleum Heat & Power Co., Stamford, Conn. Model HT-S3 boiler-burner unit is rated at 325 sq. ft. standing steam, 450 sq. ft. hot water. It employs a double-incline fire pass, using 34 sq. ft. of boiler plate area, to generate steam in 12 mins. from cold water, fresh steam in 30 secs. or less.



Left: *Hi-Therm boiler-burner unit.*

Right: *Hi-Therm warm air conditioner.*

Model HT-W3, rated at 90,000 Btu/hr, is a warm air steam conditioner, which will supply 3 gal. per minute of domestic hot water. Using the boiler-burner unit as a heat exchanger the steam rises into a copper finned radiator and heat is delivered to a duct by blower. Domestic hot water coil is immersed at all times in the heating body. The unit is 20″ wide, 69″ high and 48″ long.

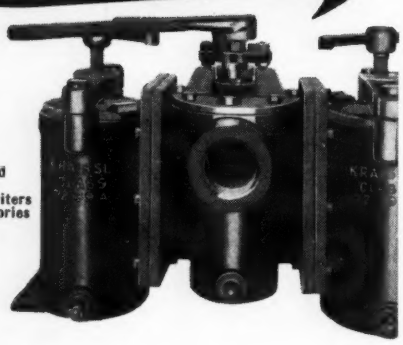
Hi-Therm units are packaged, ready for firing, with a built-in combustion chamber, burner bolted to floor straps, all controls wired and mounted. All are equipped with electronic control.

Photoswitch Type 2A10C Indicates Excess Smoke

TYPE 2A10C excess smoke indicator, announced by Photoswitch, Inc., Cambridge 42, Mass., gives a continuous indication of the condition of gases passing through a flue, signalling when either smoke or air are sufficiently excessive to cause inefficient combustion or create smoke.

It consists of a photoelectric control, light source and Densometer. The control includes a phototube and electronic amplifier, operating a dual relay system and indicating meter in the Densometer, located on the boiler room panel board. The light beam from the light source projects from an opening in the flue to the eye of the control, installed on the opposite side of the flue or breeching.

Cut "down-time"
REMOVE SLUDGE and DIRT
from fuel oil lines with
KRAISSL SEPARATORS



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Single and Duplex Separators — both Standard and High Pressure —for light and heavy oil. You can have any practical degree of separation by simply changing the basket—no tools needed. Outside installation gives instant, easy access *without the dismantling of your burner.*

Eliminate filter replacement costs entirely — cleaning of Kraissl filter baskets restores original efficiency.

KRAISSL CO., INC.
295 Williams Ave., Hackensack, N. J.
Write for our Bulletin A-1214 today. If you have any special problems—if you need any detailed information—please write us fully. You will receive a prompt and detailed reply.

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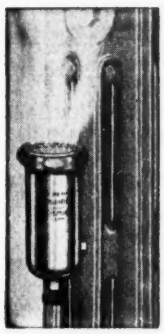
KRAISSL THE KRAISSL COMPANY, Inc.
HACKENSACK, N. J.

don't let LACK OF HUMIDITY spoil your heating jobs!



No. 95 AUTO-VENT installed on steam radiator in place of the usual air valve.

★ ★

Use AUTO-VENT

AUTOMATIC HUMIDIFIER

on low pressure steam systems

"IT VENTS AS IT HUMIDIFIES"

Discharges one pint of water vapor per hour at one lb. steam pressure—sufficient humidity for 2,000 cu. ft. of space. Easily regulated—noiseless in operation. To install, merely remove air valve and screw in AUTO-VENT.

Made entirely from non-ferrous metals—lasts indefinitely. Nationally advertised—thousands now in use giving perfect satisfaction.

on hot water or steam radiators use

Ol' Faithful

AUTOMATIC HUMIDIFIER

No. 34 OL' FAITHFUL Installed on hot water radiator.

Equipped with patented copper bound, corrugated evaporators which vaporize as much as 1½ gal. of water daily at hot water radiator temperature of 130°—capacities 20% greater on steam radiators. Constant water line automatically maintained. Easily installed.

Supply water can be taken directly from hot water radiator, or on steam radiator from nearest water line. Made in three sizes: 18", 24" and 36" lengths. Furnished complete as shown.

Use our

CONVECTOR

Automatic Humidifier

for Concealed Convector Hot Water, Steam or Vapor Radiators. Designed to fill the demand for ample humidification where concealed convector radiators are used. Made in 10 sizes.

★ ★ ★

MAID-O'-MIST Humidifiers are being advertised this winter in House Beautiful and Better Homes and Gardens . . . Write today for literature on entire MAID-O'-MIST line.

MAID-O'-MIST INC.

3221 N. PULASKI RD.
CHICAGO 41, ILLINOIS

AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS

Here's the Radiator Valve that Automatically

KEEPS EACH ROOM AT THE DESIRED TEMPERATURE

Modern heating men insert Heat-Timers in place of ordinary radiator air valves. For this precision, thermostatic valve enables your customers to enjoy the exact temperature they want *in each room.* They simply set the dial – Heat-Timer does the rest. Over 50,000 Heat-Timers are giving superb service today! Heat-Timer works on any one-pipe steam system...makes all other valves old fashioned.

Costs A Little More... WORTH *Lots* MORE!

Besides giving added comfort, Heat-Timer actually pays for itself in fuel savings. Your customers will gladly pay the small extra cost of Heat-Timer when you explain its advantages. Heat-Timer retails at $4.95 each – you get your usual discount.

At Your Jobber's—Or *Write for Sample*

Your jobber has Heat-Timer valves, or can get them quickly. If you would like a sample for yourself, mail us the coupon below with $3.50 and we will send you one postpaid by return mail. Free folder gladly sent on request.

F-3

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☐ Please send me 1 Heat-Timer valve, postage-paid, for which I enclose $3.50.

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Individual_____

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Address_____

My jobber is_____

Manufacturers Activities

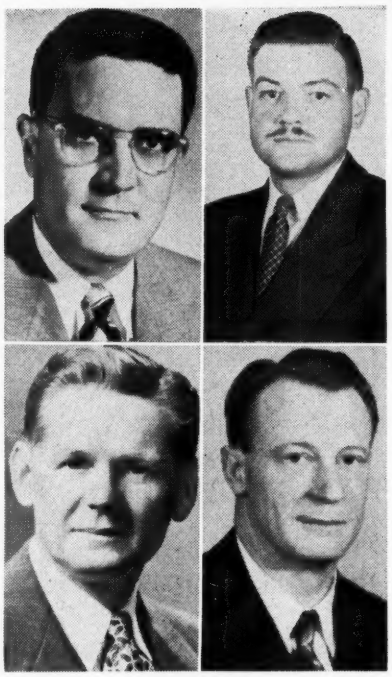
Honeywell Promotes Six To New Sales Positions

ANNOUNCEMENT of personnel changes, including new regional branch and division managerships, has been made by Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. The changes:

Kent L. Wilson named manager of the newly formed manufacturers' division, to assist A. H. Lockrae, vice president in charge of the heating controls division. Mr. Wilson joined the company in 1935 and has been Detroit branch manager and southwestern regional manager.

T. S. Carley, former Detroit branch manager, succeeds Mr. Wilson as head of the Honeywell-Brown office in Dallas, Texas.

J. A. DePuy has advanced to the managership of the Detroit office; He joined the company's New York office as an instrument engineer in 1936, later transferred to Detroit and to Cincinnati, where he became manager in 1943.



Top: *Left, Wilson; right, Carley.*
Bottom: *Left, Richardson; right, DePuy.*

Jack Richardson, who has been manager of the industrial division's sales department in Detroit, succeeds Mr. DePuy as Cincinnati branch manager; James Dunlap has transferred from Toledo to succeed Mr. Richardson at Detroit and Harry Merkel, of the Pittsburgh office, has transferred to Toledo in charge of industrial sales.

Viking Sho-Mobile On Tour to Display Products

THE FIRST 10,000 mile trip, now being undertaken by Vikings Sho-Mobile, display room on wheels, will bring to distributors in the south and southwest an opportunity to see the products of Viking Air Conditioning Corp., Cleveland 2, Ohio. Laurence Bloom, sales manager of Viking's Fan Division, is conducting the "cruise" of the Sho-Mobile, assisted in his demonstrations by the factory representative in each area.

The entire display, designed and built in the company's plant, is constructed inside the largest size Dodge route van type truck. Each piece of equipment is hooked up and ready to operate, with electrical power furnished by an extension cable run from the parked truck to an outlet. Two independent lighting sys-

CROWN your Installation with THE **GALONGAGE!**

Outstanding in its field, *Galongage* design, construction and appearance does credit to the finest heating installation. Because *Galongage* measures in gallons... has an easy-to-read magnifying lens... requires only 4-inch head clearance... comes fully assembled... is approved by Underwriters' Laboratory.

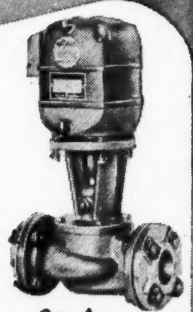
When ordering, specify depth of tank and size of opening.

APPLIED MECHANICS COMPANY
167 OLIVER STREET, BOSTON 10, MASSACHUSETTS

Yula

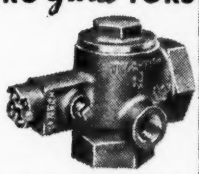
HAS EVERYTHING YOU NEED AT LOW PRICES!

IN-BOILER HEATERS

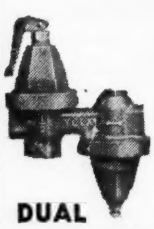


CIRC Yula TORS

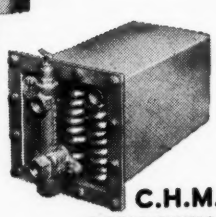
MIXING VALVES



FLOW VALVES



DUAL CONTROLS



C.H.M. RESIDENTIAL TANKLESS HEATERS

PRESSURE REDUCING VALVES

Yula WATER HEATERS, INC.
144 WEST 225 ST. • NEW YORK 63

WRITE FOR COMPLETE CATALOG

Over 1,000,000,000 Gals. Fuel Oil Successfully Treated

Avoid a possible plant shutdown by treating your fuel oil with Alken Certified EVEN-FLO Oil Conditioner.

Alken Certified EVEN-FLO Fuel Oil Conditioner
—Assures the even flow of oil from oil tanks to oil burners
—Reduces soot deposits
—Insures increased efficiency
—Makes your oil stretch.

Write for booklet FO and Free demonstration.

ALKEN-MURRAY CORPORATION
131 E. 23rd St., New York 10, N. Y.
Individual Water Treatments—Soot Removers

Certified Alken
EVEN-FLO
FUEL OIL CONDITIONER

The Proven OIL BURNER that
DOES MORE • DOES IT BETTER • AT LESS COST
Why? Write: REIF-REXOIL, Inc., 37 Carroll St. Buffalo, N. Y.

Rexoil
SINCE 1922
Manufacturers of Rexoil Conversion Burners, Boiler Units, Furnace Units and Direct-Fired Conditioners

---

UNDERWRITERS' APPROVED

SHALLO-WELL
OIL-FIRED FLOOR FURNACES
ONLY **34** INCHES DEEP
BTU CAPACITIES OF
★ 50,000 ★ 65,000 ★ 75,000
Write for Details!
ORAN
ORAN COMPANY
2230 S. THIRD STREET
COLUMBUS 7, OHIO

PROFIT NOW!
WITH
GRAND RAPIDS FURNACE CLEANERS

It's easy to get a lion's share of furnace cleaning profits when you use a Grand Rapids Furnace Cleaner. Greater cleaning capacity, handling ease and practically designed groups of furnace cleaning attachments help you give better service and clean more furnaces per day at a higher profit.

Act now! Write today for complete information and prices.

DOYLE VACUUM CLEANER CO.
233 Stevens St., S.W. Grand Rapids 7, Michigan

Smoke means wasted energy!

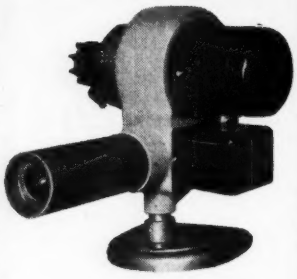
SENTRY DRAFT CONTROLS REDUCE HEAT LOSS . . .

- Sensitive operating action
- Completely automatic operation
- Non-corrosive brass bearings
- Easy to install . . . quickly!
- Factory adjusted for accuracy
- Durable, rugged construction
- Full range of sizes from 6" to 12"
- Fully warranted and guaranteed
- No servicing necessary
- Underwriters' listed

Made by the manufacturers of SENTRY AT-A-GLANCE tank gauges. Write for descriptive literature.

KRUEGER *Sentry* PRODUCTS
GREEN BAY • WISCONSIN

HOW TO STOP FUEL WASTE



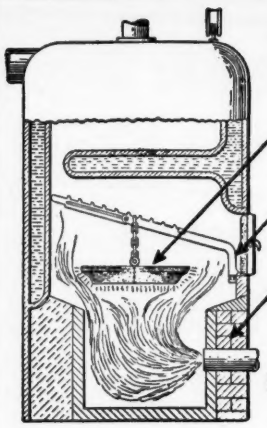
Imagine a bunsen burner with no central air-hole or a stoker without air driven to the center of the fuel bed.

Only Airflame provides means to drive air into the CENTER of the oil mist ball. Less waste. More Heat.

Dealers, Distributors, Mfg. Agents write

AIRFLAME, INCORPORATED

648 McALISTER AVENUE WAUKEGAN, ILL.



IRON-HIDE

High Quality—Low Price

HINGED, FOLDING BAFFLES

•

ADJUSTABLE BAFFLE SUPPORTS

COMBUSTION CHAMBERS (INSULATING TYPE) ALL SIZES & SHAPES

IRON-HIDE REFRACTORIES, INC.

DOCK ST., MATAWAN, N. J.

tems are built-in, one 6-volt system off the truck's regular system, the other a standard 110-volt circuit for use when the truck is hooked up to a regular outlet.

Each product is mounted so that it can be demonstrated to advantage. The window fan is mounted in a dummy window, the attic fan is installed on a swivel so that it can be seen from the under side as if mounted in the ceiling and from the top as if in the floor of an attic. Also, a complete blower-filter package is installed and a humidifier is shown in a regular merchandising display that demonstrates how it would be installed in a furnace.

This is the second year that Viking has used a traveling exhibit. The previous exhibit was housed in a trailer.

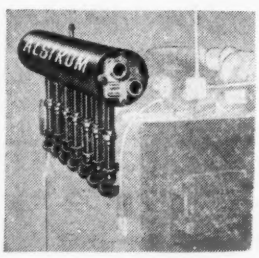
Winkler to Sponsor January National Sales-Product Meeting

A TWO DAY national sales-product meeting has been scheduled by U. S. Machine Corp., Lebanon, Ind., for January 19 and 20 at the Antlers Hotel, Indianapolis. All Winkler retail outlets and their personnel are eligible to attend the meeting, which is being held at a time when Winkler district sales managers will be the factory for their annual conference. The managers will remain over for the Indianapolis meeting and help their accounts organize effective selling programs for 1950.

Claude A. Potts, Winkler vice president in charge of sales, explains that the company is purposely holding a January

ALSTROM DEPENDABLE TANKLESS HEATERS

The VACUUMATIC (ILLUSTRATED) FOR ALL CAST IRON BOILERS



Submerged Coils For All Steel Boilers

The Counterflow For Small Homes

Catalogue on Request

The ALSTROM CORPORATION

4184 Park Ave., New York 57, N. Y.

E-Z SOOT DESTROYER

PAYS PROFIT - SAVES TIME

(For fuel oil soot only.) Keep a supply on every Service Truck. Sell cleaning jobs at every opportunity. *Use E-Z.* One application does a thorough soot cleaning job in one application. Pays profit. Saves time. Sell the one lb. cans to customers. If your Distributor cannot supply you, order direct.

No. 1 Pkg. approx. 1 lb. List $1.00 ea.

No. 5 Pkg. approx. 5 lbs. List $4.50 ea.

Special discount to Distributors on quantities.

HEALY-RUFF COMPANY

797 HAMPDEN AVE., ST. PAUL 4, MINNESOTA

FITZGIBBONS

For 63 years, the right name in

STEEL BOILER HEAT

A.S.M.E. CODE CONSTRUCTED

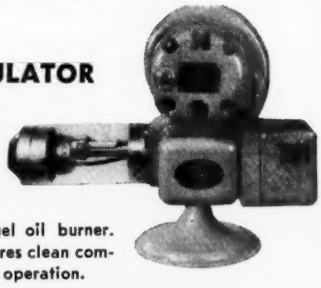
HYDROSTATICALLY TESTED

HARTFORD INSURANCE INSPECTED

S.B.I. CODE RATED

Fitzgibbons Boiler Company, Inc. 101 PARK AVE. NEW YORK 17, N. Y.

THE WEATHERALL ELECTRONIC TURBULATOR



Now You Can Realize FUEL SAVINGS FROM 14 TO 36%

A new dependable automatic fuel oil burner. It reduces fuel consumption—Insures clean combustion—Provides quiet burner operation.

Exclusive Franchise Territories Available

WEATHERALL ENGINEERS, INC.

387 CHARLES STREET

PROVIDENCE 4, RHODE ISLAND

Herco has it!

WHAT, you say?

- A low-cost Stainless Steel Oil Heat Unit for warm air systems. Offers your customers dependable automatic heat plus beauty, comfort and economy . . . in one low-priced package.
- A conversion burner that's really a dandy . . . with exclusive "under the hood" features that put sell in your sales talk.

Write for literature

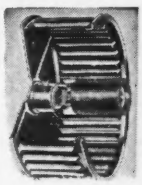
HERCO OIL BURNER CORPORATION, Lancaster, Pa.

Standard in the Oil Heating Industry

LOVEJOY L-R FLEXIBLE COUPLINGS

Always reliable. Fool-proof. Trouble-free. For Pumps, Fans, Blowers, Power Transmissions from motor to equipment.

Ask for details and prices.



LOVEJOY FLEXIBLE COUPLING CO.

Mfr. of Lovejoy Variable Speed Transmission Equipment and Lovejoy Universal Joints.

5012 W. Lake St.
Chicago 44, Ill.

Save money. Use fans equipped with L-R Jaws.

meeting so that new equipment, sales material and sales plans can be made available to dealers and permit them to capitalize on the maximum number of sales during the normally slow season. In addition, personnel who can arrive the day before the two day meeting will be escorted on a factory tour.

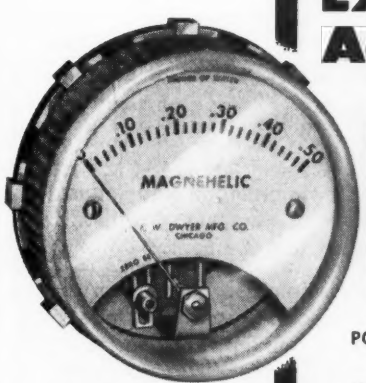
The plan is a departure from usual company policy when new products and sales helps were introduced and explained in a series of regional meetings. The entire program took up to six months to complete and the two-day national meeting is being substituted to acquaint all personel with all available material at the same time.

Coastal Oil Offers New Set of Dealer Sales Aids

ELEVEN items are available in a new portfolio of sales and operational aids prepared for its customers by Coastal Oil Co., Newark 2, N. J., with other material in preparation to be issued from time to time. Coastal first made a set of business builders available in 1947 and absorbs the cost of preparation so that they are offered to fueloil dealers for the actual cost of printing.

The group includes three direct mail campaigns, one directed at winning new customers, another to regain lost customers and the third aimed at selling newcomers in a dealer's area. A wide selection of basic sales letters is included, along with a special booklet on credit facts, folders, newspaper advertisements, cellar cards and blotters. Formal

Extremely Accurate



DWYER MAGNEHELIC GAGES

Measure

- Filter Resistance
- Air Velocity
- Furnace Draft
- Fans & Blowers
- Gas & Static Pressures

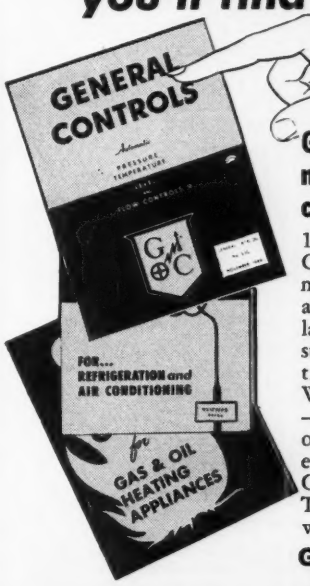
POSITIVE ACCURACY ALWAYS with DWYER Magnehelic Gages! That's because there are no bearings or links to wear. There is sensitivity to 1/4 of one thousandth of an inch magnet movement via DWYER's helical magnetic linkage. No damage from sudden surges. Portable and stationary models; ranges 0-1/2" up to 0-24" of water.

GET DWYER Bulletin No. 250 for full details now!

F. W. Dwyer Mfg. Co.

315 South Western Avenue, Chicago 12, Illinois

when the call is for CONTROLS you'll find the answer HERE



Bigger, Better, General Controls Catalog now ready—reserve your copy today.

104 pages covering the *complete* General Controls line of Automatic Pressure, Temperature, Level and Flow controls. It charts, tabulates and details, capacities, pressures, dimensions and specifications of hundreds of controls. Whatever the product or process—in heating, refrigeration, aircraft or industry, there's a *better* General Control for the job. General Controls *do* more and cost *less*. The new Catalog tells how and why Send for your copy today.

GENERAL CONTROLS
807 Allen Ave., Glendale 1, Calif.

GENERAL CONTROLS

Automatic Pressure, Temperature, Level and Flow Controls

FACTORY BRANCHES: Baltimore (5), Birmingham (3), Boston (16), Buffalo (3), Chicago (5), Cincinnati (2), Cleveland (15), Dallas (1), Denver (4), Detroit (8), Glendale (1), Houston (6), Kansas City (2), New York (17), Minneapolis (2), Philadelphia (40), Pittsburgh (22), San Francisco (7), Seattle (1), St. Louis (12), Tulsa (6).

DISTRIBUTORS IN PRINCIPAL CITIES.

and informal contract forms have been prepared on postcards or letter sized sheets, with winter budget plans, to assist dealers in securing customers on easy-to-carry terms, rounding out material presently available.

White-Rodgers Establishes Authorized Exchange Agencies

A TOTAL of seventy-eight exchange agencies in thirty-two states have been named by White-Rodgers Electric Co., St. Louis 6, Mo. These firms will provide control information service, immediate replacement and repair service for the entire line of heating controls the company offers. A similar group of agencies has been designated to service refrigeration and air conditioning controls.

Each outlet carries in stock a supply of parts and sub-assemblies and is authorized to handle replacement service on standard White-Rodgers controls, regardless of where purchased. Controls within the guarantee period which fail to operate and have not been damaged by mishandling will be replaced without charge by the agencies, as specified in the company's guarantee. Controls beyond the guarantee period which become defective, and unless damaged beyond repair, are replaceable at standard replacement prices.

Detroit Lubricator Offers Catalog of Oilburner Controls

CATALOG NO. 400, prepared by Detroit Lubricator Co., Detroit 8, Mich., is a collection of its complete line of oilburner controls. The catalog is divided into three parts, one containing brief descriptions of units recommended for stocking by wholesalers and dealers, the second detailing information on Detroit vaporizing burner controls and other oilburner accessories. The last section contains general information and service data to facilitate proper selection of float valves and vaporizing burner controls. Data includes flow rates, valve markings, conversion tables and electrical ratings.

A feature of the catalog is a two page index of current and obsolete Detroit oilburner controls, giving catalog numbers, description, status, whether repairable or not and replacement data.

Lau Blower Conference Employs College Theme

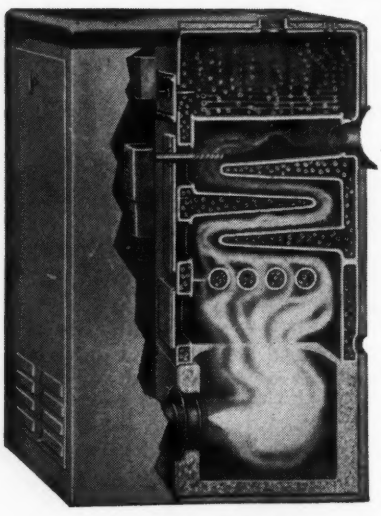
DURING the annual sales conference of Lau Blower Co., Dayton, Ohio, held October 26, 27 and 28, more than thirty-five representatives and salesmen were initiated into "Betta-Sella-Fan" fraternity. The three-day conference emphasized its college theme by supplying the representatives and salesmen with freshman beanies and pennants. It was reported all students graduated with high honors and received diplomas.

E. B. Lau, president, expressed satisfaction with the growing field sales force and promised improved products and comprehensive selling plans to assist it in the coming year.

G-E Air-Wall Units Accepted for FHA Loans

THE AIR-WALL heating system, developed by General Electric Company's Air Conditioning Department, Bloomfield, N. J., is considered mechanically acceptable by the Federal Housing Administration for use in properties otherwise

Steel HEATING UNIT



Licensed under U. S. Pat.

Write for full particulars about Exclusive Franchise for your territory on our full line of MAGIC-HEAT Boilers and Boiler-Burner Units.

Magic-HEAT

Product of

MARIETTA METAL PRODUCTS CORPORATION
MARIETTA, PENNA.

DEALERS!

CASH IN ON THIS PROFIT OPPORTUNITY!

You can now handle commercial and industrial burner installations quickly, easily, without being an expert combustion engineer.

With the superbly designed and engineered SIMPLEX line, you can tackle hospitals, garages, large public and private buildings, not to mention bakeries at both oven and boiler room levels.

SIMPLEX precision horizontal rotaries and turbine type burners are designed for dealer installation. They represent 39 years of successful oil burning experience—always in demand where trouble free performance counts.

MAKE INDUSTRIAL AND COMMERCIAL JOBS RING THE CASH REGISTER FOR YOU. WRITE FOR DETAILS TODAY!

SINCE SIMPLEX 1910

SIMPLEX OIL HEATING CORP.
11 PARK PLACE, NEW YORK 7, N. Y.

DOMESTIC, INDUSTRIAL, AND CUSTOM DESIGNED OIL BURNING SYSTEMS

eligible for mortgage insurance under the Minimum Property Requirements and risk rating procedure of the Administration.

The Air-Wall system (March 1949 issue, page 100) is a complete package, designed for small homes, and consists of a G-E gas or oilfired furnace, small diameter ducts and elbows, plenum chamber and registers, which distribute the air upward in a wide, fan-like pattern.

Western Furnaces Occupies New Building in Tacoma

WESTERN FURNACES, INC., General Electric heating equipment distributor in Tacoma, Wash., recently occupied its new building on Highway 99 between Tacoma and South Tacoma. The larger quarters house the firm's offices, salesrooms, shop and warehouse. An outgrowth of a company organized in 1912, Western Furnaces has been under its present management since 1930. D. S. Robinson is president; H. J. Stelling, treasurer and M. S. McDonnell, secretary.

The company operated its own foundry for manufacturing wood burning furnaces for 28 years and became a distributor for other makes in 1941. Three years later G-E's line of gas and oilfired boilers and furnaces was added. Western Furnaces also sells fueloil, home insulation and weatherstripping and conducts a repair, renewal and replacement parts business in Tacoma and surrounding territory.

Manual Relates Story Of the Metropac Unit

AN INSTRUCTION MANUAL, prepared by the Metropac Sales Division, Everett 49, Mass., is designed to give its user the background for a complete sales story on the oilfired winter air conditioner, which includes a built-in water heater, along with service procedures. The opening pages of the manual are devoted to the development of a sales story, amplified by catalogs on the Metropac unit and a copy of the Warm Air Association's book, "Seven Steps to Indoor Comfort." Following pages contain reproductions of trade paper advertising the company places and newspaper advertising that is available to local dealers on a cooperative basis.

A complete section of Part I describes in detail the development, function and purpose of the Metropac unit and by question-and-answer describes completely its operating features. Specifications are listed for the unit.

Part II opens with assembly instructions, control settings, external connections and wiring diagrams. The concluding portion of the section contains catalogs and installation data sheets on component parts and accessories that are incorporated into the unit.

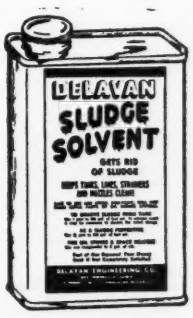
General Controls Opens Three New Branch Offices

OPENING of three new branch offices has been announced by General Controls Co., Glendale, Calif., making a total of twenty-one offices now maintained by the company. The new offices are located at Minneapolis, Buffalo, Baltimore.

R. Roger Rosell, Jr., has been named manager at Minneapolis; Paul A. Palmgren at Buffalo and Fred H. Angier at Baltimore.

DELAVAN..

SLUDGE SOLVENT

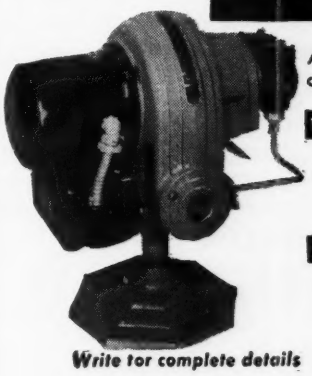


DISSOLVES SLUDGE
GETS RID OF SOOT

A new, powerful solvent that is GUARANTEED to dissolve sludge and prevent the formation of soot. Safe to use and store. One Pint treats 500 gallons of fuel oil. A real money-maker for dealers and jobbers.

DELAVAN
MANUFACTURING CO.
3009 SIXTH AVE., DES MOINES 13, IOWA

important OIL BURNER FACTS ABOUT Radiant
THE SERVICEMAN'S BURNER



A nation-wide survey conducted by our advertising agency showed that

1. RADIANT burner performance is equal to the highest price burner. Yet they are priced to meet the lowest competition, even on project work.
2. Heavy sales are due to
   —low cost of upkeep
   —ease of installation and servicing
   —factory guarantee
   —national distribution in protected territories

Write for complete details

California, Oregon and Washington Representative

PACIFIC ENGINEERING EQUIPMENT CO.
1217 S.W. 19th Ave.
Portland 5, Oregon

RADIANT UTILITIES CORP.
8817 18th AVE., BROOKLYN 14, N. Y.

RAYFIELD BURNERS
FOR No. 4 or No. 5
HEAVY OILS

MODEL JR.
1.00 to 5.00 GALS./HR.
MODEL D4
3.00 to 12.00 GALS./HR.

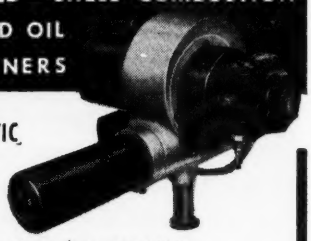
1. Fully Automatic
2. Self Cleaning Nozzle
3. Self Lubricating
4. All Electric Operation
5. Pays for itself from savings
6. Burns the cheaper No. 5 oil

RAYFIELD
AUTOMATIC

HEAT RECLAIMERS

1. Low in Price—Automatic—Easy Installation
2. Installs on Boilers, Furnaces or Stoves
3. For use with Coal, Gas, Oil or Wood
4. Increases output of ANY gravity warm air furnace
5. Heats Basements, Play Rooms, Garages, etc.
6. The hotter the stack—the more heat reclaimed
7. Saves wasted heat now going up the chimney

RAYFIELD—SHELL COMBUSTION
HEAD OIL
BURNERS



for CATALYTIC
OILS TO
#3 GRADE
2 MODELS
1.00 to 3.00 GALS./HR. CAPACITY

1. Shell Head Economy 12 to 15% CO_2
2. Clean boilers with perfected combustion
3. Burns Catalytic oils easily
4. Quiet—No Vibration or pulsation
5. Cuts user's oil bills 14 to 36%
6. The ideal replacement oil burner

C. L. RAYFIELD COMPANY • 2010-18 SO. HALSTED ST. • CHICAGO 8, ILL.

API Annual Meeting

(*Continued from page 39*)

fors, Quincy Oil Co., Quincy, Mass.; H. B. VanCleve, Maritime Petroleum Corp., New York.

The next meeting of the Marketing Div. of the Institute will be held at Hotel Meuhlebach, Kansas City, Mo., on April 24-25. The annual meeting of the Institute next year will be held in Los Angeles the week of November 6th. For the annual meeting the Marketing Div. elected the following program committee: A. L. Nickerson, Socony-Vacuum, New York, chairman, Russell Williams, Indianapolis, Walter Hochuli, Texas Co., New York, John Dressler, Hackensack, N. J., and E. J. McClanahan, Standard of California, San Francisco. Rex Blazer, Allied Oil Co., Cleveland, was chairman of the Nominating Committee that proposed all of the appointments mentioned.

William R. Boyd, Jr., president of the Institute for many years, announced his retirement from all business activity at the meeting. Unable to locate a permanent successor for Boyd, the directors appointed as temporary head until March 1 Gen. Baird H. Markham of Oklahoma, who has been director of the American Petroleum Industries Committee of New York. At the same meeting, W. Alton Jones, head of Cities Service, was elected chairman of the board, a newly created post.

George Freyermuth, head of public relations for Standard Oil Co. (N. J.), was elected chairman for 1950 of the Oil Industry Information Committee, succeeding Conger Reynolds of Indiana Standard. Three vice-chairmen also were elected: Phillip Humphrey, Texas Co., N. Y., Stanton Smith, Smith Oil & Refg. Co., Rockford, Ill., and William Gerwe, Socony-Vacuum, Chicago.

◈

Grover R. Dale, executive secretary, Pennsylvania Petroleum Association, Harrisburg, Pa., died recently. He was instrumental in organizing the Pennsylvania oil jobbers three years ago and was active in developing the organization to its present state. Mr. Dale spent the greater part of his life in the industry, knew it well and was well-known for his association work.

Oilheating Trends

(*Continued from page 11*)

that this should be 3.1¢. Those reporting from Mid-Atlantic markets have average margins today of 2.5¢ and believe they should have 2.8¢. The reporting Midwest fueloil distributors have average margins of 2.3¢ and think they should be an average of 2.5¢. On the West Coast the average of those reporting is 2.7¢ and the marketers believe this should be 3.3¢. For the country as a whole the average present margin of those reporting is 2.6¢ and they believe it should be 2.8¢. This shows a much more favorable margin attitude throughout the industry than was apparent a year ago.

DEALER COMMENTS: Typical comments on questions of the month are these. . . . "Oil should sell for less than 10¢ a gallon" . . . "The rush is over—from now on it will be a matter of selling the buyer again" . . . "Tanks went from $22 to $37 overnight" . . . "Seven different retail fueloil prices in six months is going to give gas heat a good talking point with their stable prices" . . . "Oil suppliers are offering under-

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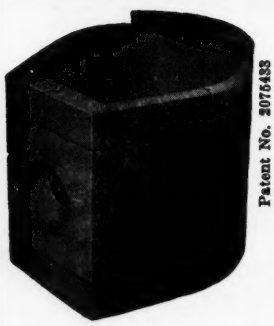

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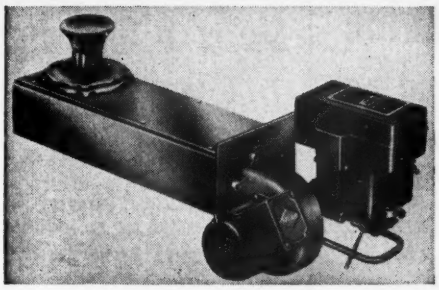

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cover discounts in some instances, very confidential" . . . "Price cutting in the past year has not been so much the result of high fixed margins but because of special discounts given by terminal operators to rack buyers" . . . "It's time for the oil and oilburner industry to sell its product to the public; we are all asleep" . . . "We must hold our margin or can't exist; some companies are now giving free service and parts for oil contracts" . . . "Price cutting on oilburners is very bad, with Sears, Roebuck now down to $239, a new low point for Philadelphia" . . . "No comments—just give us a real old-fashioned cold winter" . . . "We are running into a pipe shortage" . . . "Business is good in Iowa" . . . "Sales slowing down in October and November" . . . "It is nice to think that the majors might not continue to set the price and hold it so high in a cheap gas area; I notice where Indiana Standard is going to have local pricing" . . . "Our margin is the same as in 1940 while our expenses have increased over 50% and the price of fueloil increased from 6¢ to 11.5¢" . . . "The same few price cutters still fail to see the light" . . . "It is our experience that there will always be some price cutting no matter what the margin."

◈

Arthur R. Hanson, secretary and sales manager, L. O. Koven & Bro., Inc., Jersey City, N. J., was elected president of the Jersey City, N. J., Chamber of Commerce recently. He has been with the Koven firm, producers of Waterfilm boilers, for thirty years and is known for his interest and activity in civic affairs.

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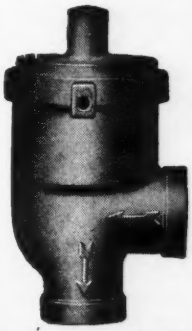

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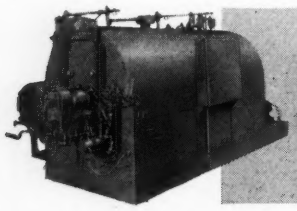
SKUTTLE MFG. CO., Detroit 7, Mich., describes its humidifiers in a four-page folder. Series 600 is featured in the literature, which includes smaller illustrations also of series 500 and 300 models and service parts data for the latter two models. Capacities are shown for model 600 using varying numbers of Vapoglas evaporating plates.

TRU-HEET CO., Trenton, N. J., in an attractive folder discusses the four models of gun type oilburners offered, equipped with a patented firing head. Specifications for the burners, whose capacities range from .5 to 10 gph, include data on motor hp, dimensions and steam and hot water capacities in sq. ft. Inside pages of the folder picture the combustion head and employ an arrowed diagram to point out features.

FITZGIBBONS BOILER CO., INC., New York 17, N. Y., has published a bulletin on the "400" series steel boiler for residences and small buildings. Copy and illustrations describe the units and their features, with specifications and dimensions listed in easy-to-read tables. Phantom view of the boiler and its construction is reproduced in three colors, with other illustrations to show water circulation, and servicing accessibility.

E. P. HOUGHTON & CO., Philadelphia 33, Pa., has published a revised, enlarged 6-page folder on Houghto-Solv, fueloil additive. In addition to describing its physical composition, how it functions and results obtained, the folder features enlarged micro-photos showing Houghto-Solv as it disperses sludge deposits. Houghto-Solv "W," an additive for emulsifying free water in the fueloil system, also is described.



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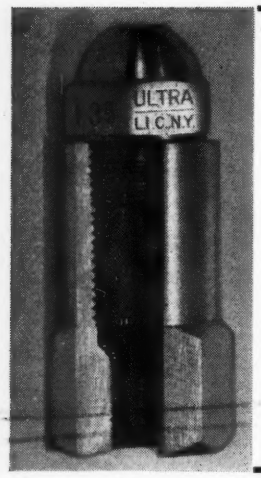

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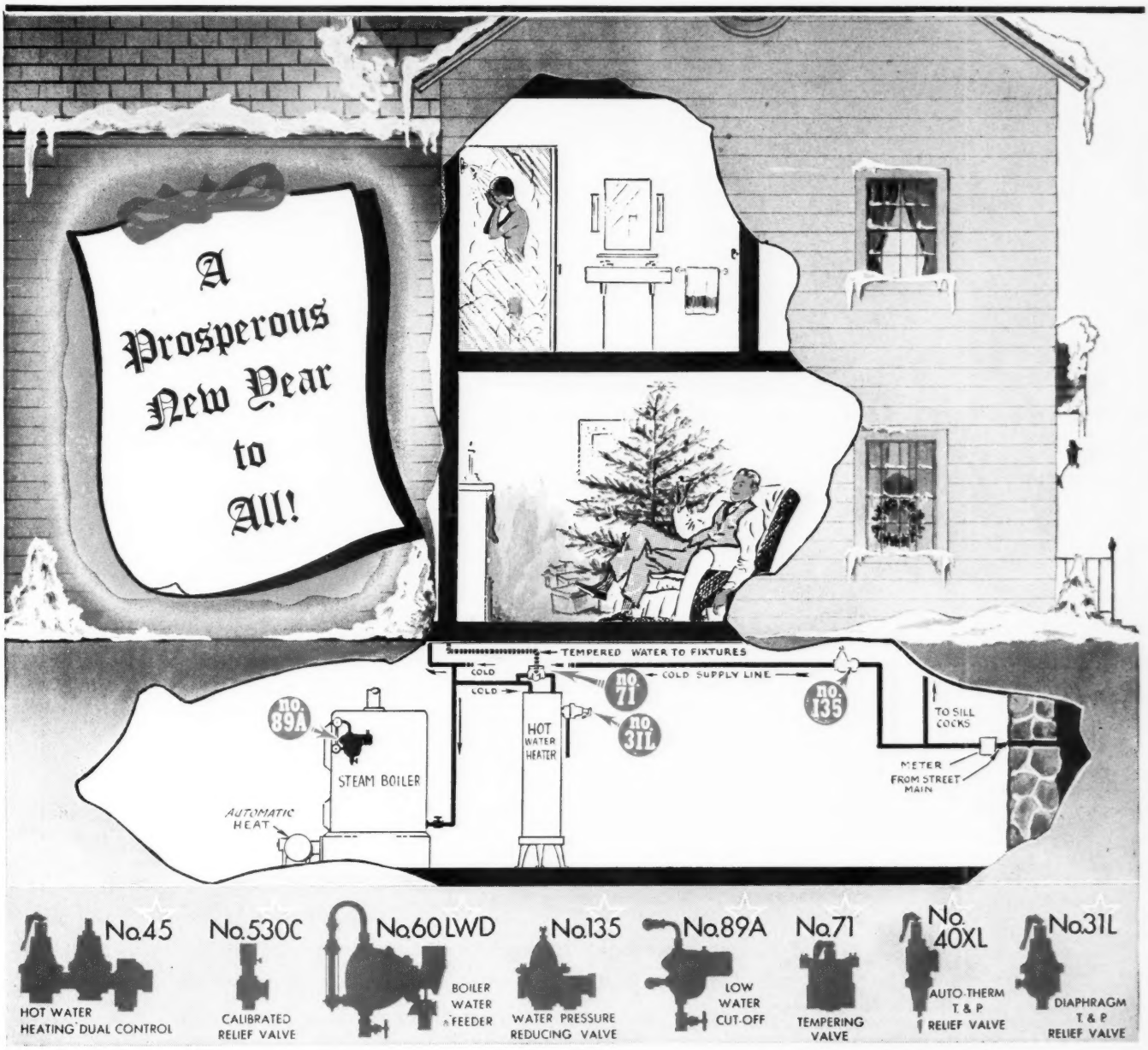

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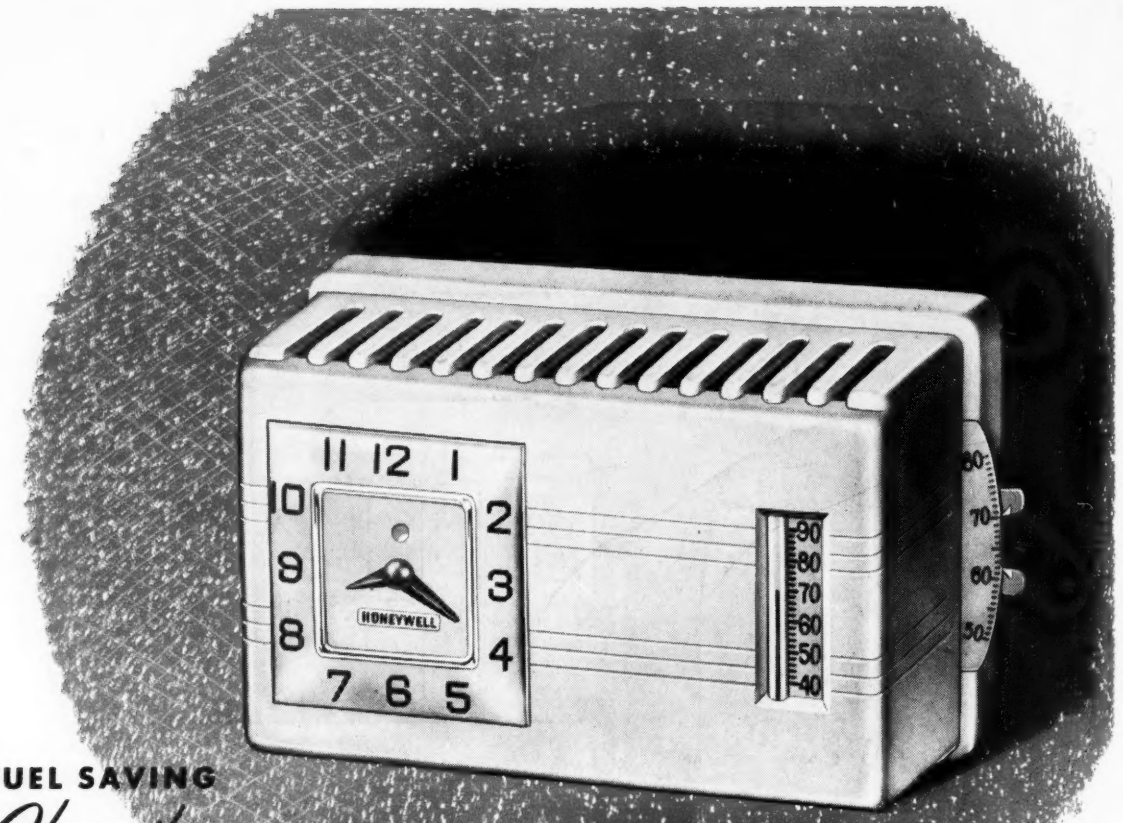

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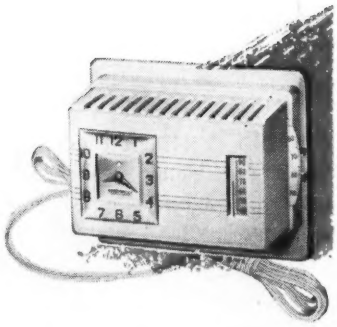
THE new Honeywell Comfort Chronotherm is not just a thermostat. Of course it is the finest, most accurate and most sensitive thermostat ever conceived, but in addition it is a real fuel saver, 24 hours a day. Equipped with a Telechron clock, this amazing Chronotherm automatically lowers the room temperature to a fuel saving level at night, and automatically returns it in the morning—at any hour selected. Recommend and install Chronotherm on every job. Assure your customers of complete automatic heating satisfaction. They will not only have the finest in thermostats but will save fuel and gain untold convenience as well. And remember, Chronotherm will pay for itself in fuel savings.



The new Plug-In Chronotherm is designed to replace all manual thermostats. All the advantages of the regular Chronotherm. Anyone can install it in a few minutes.

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